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ABSTRACT

To identify ways employers can strengthen the link between school and work, case studies of efforts to link school to work were conducted in four urban communities: Boston, Massachusetts; Fort Worth, Texas; Louisville/Jefferson County, Kentucky; and Philadelphia, Pennsylvania. Data were gathered from interviews with educators, members of the business community, and representatives of bodies devoted to linking school to work (for example, private industry councils, work force development councils, and school-to-work partnerships). All four communities showed evidence of the following: defining and implementing rigorous academic standards; embedding academic curricula in real-world contexts; introducing applied, hands-on pedagogy; and extending learning beyond the classroom through field-based investigations, teacher externships, community service, school-based enterprises, and work-based learning. It was concluded that employers can provide leadership in school reform by combining consistent support for district and school improvement with organized pressure to sustain and accelerate measurable progress and that employer improvement is particularly critical to strategies for reforming comprehensive high schools. The following challenges facing communities wishing to foster school-to-career programs were identified: moving from small pilots to significant scale; demonstrating improved student and school outcomes; building and sustaining support; and integrating school-to-career practices into a coordinated high school reform agenda. (Contains 85 endnotes.) (MN)

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Employer Roles in Linking School and Work: Lessons from Four Urban Communities

Committee for Economic Development

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OBJECTIVES OF THE COMMITTEE FOR ECONOMIC DEVELOPMENT

For more than 50 years, the Committee for Economic Development has been a respected influence on the formation of business and public policy. CED is devoted to these two objectives:

To develop, through objective research and informed discussion, findings and recommendations for private and public policy that will contribute to preserving and strengthening our free society, achieving steady economic growth at high employment and reasonably stable prices, increasing productivity and living standards, providing greater and more equal opportunity for every citizen, and improving the quality of life for all.

To bring about increasing understanding by present and future leaders in business, government, and education, and among concerned citizens, of the importance of these objectives and the ways in which they can be achieved.

CED's work is supported by private voluntary contributions from business and industry, foundations, and individuals. It is independent, nonprofit, nonpartisan, and nonpolitical.

Through this business-academic partnership, CED endeavors to develop policy statements and other research materials that commend themselves as guides to public and business policy; that can be used as texts in college economics and political science courses and in management training courses; that will be considered and discussed by newspaper and magazine editors, columnists, and commentators; and that are distributed abroad to promote better understanding of the American economic system.

CED believes that by enabling business leaders to demonstrate constructively their concern for the general welfare, it is helping business to earn and maintain the national and community respect essential to the successful functioning of the free enterprise capitalist system.

Foreword

Many young job seekers directly out of high school find it increasingly difficult to get "good jobs" in the modern workplace. Nearly half of our young people find themselves in this position because they either drop out of high school or are inadequately prepared in school for the skill requirements of the modern workplace. This is an egregious waste of human potential that costs our society and economy dearly. This mismatch of preparation and job requirements is increasingly costly for business too, which must engage in expensive screening, selection, and remedial training programs to ensure a productive work force.

The school-to-career movement in education reform is addressing this problem by linking the workplace more closely to the classroom. These innovative programs use the workplace and other experiences to motivate young people to learn and to help them make more informed career choices. CED's companion to this volume of case studies is the policy statement *The Employer's Role in Linking School and Work.* The policy statement explains how educators and employers can work together to improve the preparation of young people for whatever future they choose, whether or not that includes postsecondary education and training.

CED's policy statement synthesizes knowledge gleaned from the school-to-career movement nationally. But if we have learned one thing in fifteen years of developing policy on education reform, it is that the real work of learning takes place at the local level — in school districts, individual schools, and, most especially, in the classroom interaction between teachers and students and in the home with parents. That is why CED commissioned this volume of four case studies — to inform our work at the national level with real experiences of local educators and businesses working hand-in-hand to help young people succeed.

Working with Jobs for the Future (see page 95), a research and policy organization dedicated to work force development, we selected four cities for their varied experiences and their mutual commitment to transforming their public education systems. The four cities are Boston, Fort Worth, Louisville (Jefferson County, KY), and Philadelphia. One of the critical lessons learned from their individual experiences is the importance of effective leadership in the school and business community. Another is the importance of intermediary organizations that facilitate the interactions between business firms and schools. Without such intermediaries, educators and business leaders would be hard-pressed to maintain communications, stick to the course, and find ways to work together that benefit both without undue burdens.

A project of this complexity and magnitude could not have been completed without the assistance of many individuals. In particular, I want to extend special thanks to CED Chairman Frank P. Doyle, Retired Executive Vice President of General Electric, for his skillful leadership of the project on the Employer's Role in Linking School and Work, of which the case studies were a critical part. In addition, I wish to thank the other members of the project subcommittee who contributed their time, energy, and insight to the project. Great

appreciation is extended to Richard Kazis, Vice President for Policy at Jobs for the Future, who coordinated the development of the case studies and synthesized their lessons in the overview to this volume. Additional thanks are due to the case study authors, Anthony Alongi, Robert W. Glover, Judith Combes Taylor, and Basil Whiting, who also co-authored the overview (see page 94), and to Marc Miller for his editing services. We also wish to show our deepest appreciation to the corporations and private foundations, listed on page 95, that so generously funded this project.

This volume is being made available by CED as a framework for assisting local communities to bring together their schools and businesses in partnerships that will give our young people a productive foothold in the new economy. It does not contain specific recommendations, nor does it necessarily represent the views of CED's Trustees or staff.

Charles E.M. Kolb
President
Committee for Economic Development

Overview

Basil J. Whiting and Richard Kazis

The four case studies in this volume report on communities where business is forging new roles in education, roles that strengthen the academic and career preparation of young people by closely linking work and learning. These are not studies of partnerships between individual firms and particular schools; nor do they describe discrete projects that companies have long supported out of a sense of civic duty. Rather, employers in these communities are organizing to help transform public education in profound ways. They are doing so out of both community spirit and self-interest. Increasingly, they are acting from the conviction that improving the preparation of tomorrow's work force is essential to local economic competitiveness.

The communities are Boston, Massachusetts; Fort Worth, Texas; Louisville/Jefferson County, Kentucky; and Philadelphia, Pennsylvania.[1] There is great variation among these cities. Their economies, schools, and business leaderships differ substantially. So, too, do their traditions of cooperation between businesses and schools, their school reform strategies, and the scale and momentum of those reforms.

There are also important similarities. Each case study profiles a community in which a significant number of employers have become deeply engaged with civic and educational leaders in a long-term effort to improve troubled public school systems. All four communities, each in its own way and with varying levels of commitment, scale, and success, show evidence of moving toward some combination of the following elements:

- Defining and implementing rigorous academic standards;
- Embedding academic curricula in real-world contexts;
- Introducing applied, hands-on pedagogy;
- Extending learning beyond the classroom through field-based investigations, teacher externships, community service, school-based enterprises, and, especially, various forms of work-based learning.

While efforts to involve employers began in each community long before the federal School to Work Opportunities Act of 1994, all four have benefited from federal funds, and each sees its efforts as consistent with the goals and strategies of the school-to-career movement.[2]

The progress of these communities' reform efforts has been uneven. By and large, these troubled urban school systems, and their high schools in particular, have yet to demonstrate significant improvement in the outcomes of greatest public concern, such as standardized test scores. Nevertheless, there are heartening indicators in these communities of changes in teaching and learning practices and of varied and innovative engagement of local employers with their schools. Surveys of and interviews with students, educators, and employers involved in programs linking school and work elicit positive testimony. Most important, some outcomes for these students appear to be improving, particularly rates of college-going and increased rigor in academic course-taking.

Important lessons can be gleaned from these communities' stories, individually and as a group. This overview highlights common themes and strategies as well as challenges facing these efforts as they attempt to sustain past reforms, expand them, and improve their quality. Our goal here is to provide context and guidance for employers, civic leaders, and educators who wish to strengthen the connections between school and work in their own communities. (For a summary of each case study, see page 13.)

MAJOR THEMES

The case studies demonstrate that employers can be key players in district and school-level education reform through: 1) involvement in and leadership of partnerships that change the relationship between schools and their communities, and 2) support for more effective learning programs and higher standards within the schools. They provide instructive lessons about how employers can organize themselves for collective action in support of improved educational outcomes for young people.

Six major themes emerge from the experience of these communities:

1. Employers can provide leadership in school reform by combining consistent support for district and school improvement with organized pressure to sustain and accelerate measurable progress.

2. Employer involvement is particularly critical to strategies for reforming comprehensive high schools, perhaps the most difficult challenge facing our nation's schools, especially in urban areas.

3. The employer community is not monolithic. Strategies for encouraging business participation must be varied and customized to the interests of different groups of employers.

4. Systemic education reform requires strong executive leadership in both the school system and the business community—as well as a mutual commitment to collaborate toward common goals.

5. Involving large numbers of employers in linking school and work requires leadership and services from an intermediary organization that can mobilize and sustain the participation of individual employers.

6. Successful high school reform requires employers not only to provide work experiences to students but also to help teachers and schools change the routines of traditional classroom instruction.

Each theme is elaborated upon below:

1. Employers can provide leadership in school reform by combining consistent support for district and school improvement with organized pressure to sustain and accelerate measurable progress.

To embark upon a sustained agenda of improving teaching and learning, schools need both support and pressure. The business community can be a powerful advocate for improved school performance. Employers can also provide direct support to school efforts to raise academic standards and improve career preparation, by articulating employer needs and expectations and by providing students with "real world" experiences in workplaces. In these four communities, business has become a leading stakeholder in education, organizing as both a "consumer" of public education graduates and an active contributor to the civic and economic life of the community.

Employers have drawn on three powerful assets in their school reform efforts. First, employers know the regional economy, including the realities of rapidly changing labor markets and the preconditions for long-term competitiveness. Moreover, employers control access to workplaces and can shape their potential as learning environments for students. Finally, the business community is a powerful political and institutional force, able to confront and

engage the educational establishment as an equal partner in ways that are difficult for parents or other community interests.

In the four cities profiled in this report, employers have performed a variety of critical roles. They have endeavored to:

- Help recruit reform-oriented superintendents (e g., in Louisville and Philadelphia);
- Develop and articulate the economic and workforce development rationales for school reform (in all four communities);
- Express what employers want high school graduates to know and be able to do and help translate this information into rigorous academic standards (e.g. Fort Worth);
- Create, lead, or join formal collaborations with educators and other civic stakeholders to shape, support, and implement educational change (in all four communities); and
- Generate public support for reforms and political support for financing them (in all four communities).

Perhaps most important, employers have shown a willingness—indeed, a commitment—to get "into the trenches" of the educational process. Employers have helped these communities devise standards and revise curricula, and they have provided teachers with professional development opportunities, especially around applied learning. Employers have also established and supported such innovations as academies, magnet schools, career pathways, and small learning communities. They have helped schools extend the learning process outside the classroom via rich engagements with the real world, including an array of work-based learning opportunities.

In none of these four communities did business leaders start with a well-formed, elaborate strategic plan. In each, however, a segment of the business community felt the need to promote systemic reforms that could help schools meet the changing needs of modern workplaces. In each, business leaders have deepened their relationships with the school district and its leadership, advancing from support for a variety of small, unrelated projects to involvement in a broader system-wide reform agenda.

2. Employer involvement is particularly critical to strategies for reforming comprehensive high schools, perhaps the most difficult challenge facing our nation's schools, especially in urban areas.

Efforts to strengthen the links between school and work for high school age youth accelerated in the late 1980s in the wake of prestigious commission reports decrying the ineffective "school to work transition" of many young people in the United States, particularly compared with formal European systems for preparing non-college-bound young people for productive futures. Initially, these efforts focused primarily on reinvigorating vocational education. Indeed, most states and districts assigned responsibility for school-to-career efforts to their vocational education offices.

In recent years, a growing number of practitioners and policymakers have adopted a different perspective, one in which the pedagogy, organizational changes, and community partnerships that are central to school-to-career models are seen as a potentially powerful lever for reforming the highly-tracked comprehensive American high school. This perspective emphasizes a high school experience for all students based upon:

- The use of real-world contexts to teach rigorous academics;
- Academic instruction that incorporates teamwork, communication, and other so-called "soft" skills that are vital to success in workplaces and in life;
- Extension of learning opportunities beyond the classroom through internships, field-based investigations, and community projects;

- Adult mentors and coaches for student project work;
- Regular opportunities for students to explore career interests and develop personal plans for future learning and work.

This vision of high standards and more practical education for all students requires significant and varied employer involvement. In communities adopting and expanding these initiatives, employers participate on advisory or governance partnerships. They also offer learning experiences outside the classroom and serve as mentors and coaches. This direct involvement of employers with young people can help overcome some of the weaknesses of American high schools. It can connect young people to the adult world they will eventually enter, give them responsibility that motivates achievement, and enable them to function in a setting where not performing to high levels of expectation has serious consequences.

The extent to which the design elements listed above are embraced varies among their communities. In Boston and Philadelphia, this *is* the vision motivating high school reform. Boston, with historically weak vocational education and a long history of employer involvement with the schools, has adopted the above design principles as a key component of reforming high school learning and teaching. In Philadelphia, the reform agenda has placed great weight on creating smaller learning communities, with school-to-career strategies as a way to provide content and distinction to these schools-within-schools. In Louisville and Fort Worth, the district's high school reform agenda has been less fully integrated with school-to-career principles. In Louisville, the school-to-career initiative has primarily been a way to continue to improve the city's vocational programs, which underwent significant upgrading toward higher standards in the 1980s and are now housed in comprehensive high schools. Fort Worth has emphasized applied learning, focusing on teacher professional development and classroom instructional methodologies in the lower grades while moving gradually at the high school level toward integrating these efforts with workplace experiences for students.

3. The employer community is not monolithic. Strategies for encouraging business participation must be varied and customized to the interests of different groups of employers.

Discussions of business involvement in education reform often over-generalize about the employer community and its needs, priorities, and capacity. No locality has a business interest *per se;* rather, there is a richly varied community of individual employers who have complex and distinct interests, perspectives, and commitments. Their priorities may coincide with those of other employers on some issues but diverge on others. In our case studies, we identified four important distinctions among employers that influence their decisions about involvement in education reforms, school-to-career programs, and community collaborations. These are firm size, industry structure, prior civic involvement, and concern with work force quality. Successful community-wide efforts to improve the links between school and work must recognize these variations and customize their appeals to different segments of the employer community.

Firm size: Across the four communities, the largest, most visible employers are typically the leaders of business involvement in education reform. Large firms can devote full-time staff to community relations and collaborations. They have resources they can devote to partnerships. Typically, these are firms in industries where public recognition is sound marketing: banks and insurance companies, hospitals, consumer goods producers, and others for whom branding and customer loyalty are important. The CEOs of large firms expect to be active in their communities, and competitors within an industry often feel pressure to compete for leadership positions. For these firms, involvement in efforts to improve the

links between school and work is frequently a way to rationalize and increase the impact of a bewildering number of small, disconnected partnerships with individual schools, teachers, or career counselors.

The involvement of small firms, by contrast, is constrained by lean staffing for human resources and community relations. They tend to be more interested in direct, immediate return on investment from providing internships or work experiences for young people. Typically, they can offer work experiences to only one or two young people at a time. For these firms, strategies for simplifying the logistical and time demands of partnerships with schools are critically important.

Industry structure: Each industry has its own structure. For example, in hospitals, a few large firms and workplaces dominate. In banking, too, a few banks tend to control the lion's share of business and employment. However, banks typically decentralize employment across many branches and back offices. Still other industries, such as environmental engineering, are dominated by large numbers of small firms.

These distinctions can influence the ability and willingness of firms to participate in partnerships with schools and school districts. For example, Boston's school-to-career initiative began in health and financial services, industries dominated by a few large employers. The leading firms were already active in the community, making it relatively easy for the Private Industry Council to organize and support employer involvement. In contrast, a more recent Boston effort has focused on recruiting environmental engineering firms. These small firms are more difficult to engage. They are less concerned about public visibility, they have limited staff time to devote to partnerships, and they hire mostly college graduates. These challenges have made it more difficult to recruit firms and sustain their ongoing involvement.

Civic involvement: A recent U.S. Census Bureau survey of employers found that the most important indicator that an employer is likely to participate in school-to-career initiatives is a prior history of participation in community activities.[5] Firms that have already made the commitment and built a capacity for community involvement are more likely to continue such efforts and join new initiatives promoted by local civic leaders. Moreover, prior involvement in civic partnerships generates personal relationships with leaders from other firms and sectors, and these ties can be tapped for other collaborative efforts. The nature of leadership also affects these decisions. When top management cares deeply about young people and their futures, it sends a signal throughout the firm that such commitments are valued and rewarded.

The culture of civic involvement varies not only among firms but across cities. In Boston and Louisville, for example, employers have a long history of participation in civic efforts to improve the public schools, a history intertwined with racial politics in each community. The Boston Compact formalized such involvement in the early 1980s. Louisville created its own variant of the Compact a few years later. In both cities, business leadership of public campaigns to address education and other civic challenges is expected. This tradition continues to influence the behavior of individual employers, even though downsizing, mergers and acquisitions by out-of-town firms have weakened some of these expectations in recent years.

Work force quality concerns: During the past decade or so, another rationale has emerged in business thinking and action: the importance of work force quality to their future economic well-being. Employers have become concerned with the ability of their communities to retain old businesses and attract new ones—and with the ability of school systems, as the fundamental institution for pre-employment work force development, to meet evolving employer needs. This is especially true in our nation's cities. For example, the business communities in both Fort Worth and Philadel-

phia were motivated to greater involvement with the local schools in part by reports that identified poor schools as a major drawback to the cities' competitive attractiveness to high-wage, high-skill employers. In Boston and Louisville, the inability of the public schools to provide large numbers of entry-level job applicants with the requisite basic skills pushed employers to advocate school improvements more aggressively.

In each community studied, work force quality concerns have become increasingly significant motivators of employer initiative, particularly as labor markets have tightened. In general, firms that have themselves undergone significant restructuring in recent years and are sensitive to the changing demands of modern workplaces are more likely to be involved in these efforts than those that have not. From their own experience, they tend to understand both the need for higher standards and the challenges of systemic change.

4. Systemic education reform requires strong executive leadership in both the school system and the business community—as well as a mutual commitment to collaborate toward common goals.

One of the most difficult challenges in linking school and work is securing the participation of large numbers of employers. Determined and inspirational leadership of CEOs from the business community and the schools is needed to increase employer involvement with classroom learning, providing work experiences, or both.

The role of energetic, committed, and often charismatic CEOs of well-respected firms has been critical in each of these communities. At the same time, fundamental reform has also required a strong commitment from the leadership of the local school district. Boston is a clear example. The school system lacked a strong direction for and commitment to much-needed system-wide reform until Thomas Payzant became superintendent and launched a determined, comprehensive effort. David Hornbeck's arrival in Philadelphia marked a similar turning point.

Elected officials also frequently play an important role, though many lack formal power over local school boards. Strong mayors committed to school reform and to involving business in reform partnerships have been important players in Louisville and Philadelphia, where they marshaled resources, mobilized public opinion, and stimulated and supported the involvement of key leaders in business and other institutions. Support for school reform from Boston Mayor Thomas Menino grew after the contentious elected school board was replaced with a more responsive board appointed by him.

5. Involving large numbers of employers in linking school and work requires leadership and services from an intermediary organization that can mobilize and sustain the participation of individual employers.

Strong leaders are necessary but not sufficient to achieve significant reform within an institution as large as an urban school system. Success also requires effective organizational structures and institutional capacity. Public school systems trying to improve student achievement through changes in teaching and learning and in community partnerships require:

(1) *A policy body* that facilitates and structures collaboration on vision and direction. Such bodies can coordinate and mobilize the various stakeholders in education reform, including schools, business leaders, state and local governments, colleges and universities, and other community groups. This body can set quantifiable goals that become the outcomes by which progress is measured.

(2) *An operational intermediary* to organize and staff employer involvement, both *within* the employer community and *between* employers and other stakeholders in educa-

tional change. Such intermediaries can support or even take the lead in the day-to-day implementation of employer involvement in education reform, including providing work experiences for students.

In practice, employers in the four communities we studied have moved beyond one-to-one, firm-to-school relationships—although such involvement still occurs. In addition they engage the schools at the district level through established organizations that represent business interests. The Boston Private Industry Council, the Fort Worth and Louisville Chambers of Commerce, and Greater Philadelphia First (and Philadelphia's Chamber and PIC as well) all organize and speak for their employer communities and embody the employer side of the educational reform partnerships.

In each community, the partnerships combine informal and formal relationships. In Fort Worth, for example, where a few key leaders in business and education have worked together for years, the partnership has been operationalized through close, informal relations between senior leaders of the Chamber of Commerce and the school district and through the more formal Project C^3 (Community, Corporations, Classrooms).

Partnerships differ in membership and priorities, but each community has created one or more multi-stakeholder bodies comprised of varying combinations of business, educators (K-12 and postsecondary), government officials, and other community leaders. These bodies function at the policy and oversight level. Examples are the School-to-Career Leadership Council in Philadelphia, the Workforce Development Council and its School-to-Career Steering Committee in Louisville, and the School-to-Career Partnership Committee in Boston.

Beneath the community-wide, multi-stakeholder policy structures, partnerships to change the schools require staffing for intermediary functions at the operational level—linking, brokering, and building relationships between employers and schools. The individuals who play such roles must understand the needs and nature of both work and school cultures and "speak the language" of both.

Boston and Philadelphia have been particularly aggressive in creating "case manager" staff positions dedicated to promoting school-to-career to employers and supporting their ongoing involvement. These individuals coordinate the day-to-day participation of employers, including: recruiting employers for work-site visits, student projects, job shadows, and internships; training and supporting supervisors and workers; and preparing students to take advantage of work-based learning experiences. Boston has located these case managers in the schools, although the Private Industry Council is their employer. In Philadelphia, the school system funds and staffs these positions, but the Chamber of Commerce is considering taking over management of this function.

In Louisville and Fort Worth, the day-to-day connecting functions played by Boston PIC and Philadelphia's Education for Employment Office are less well-developed. Louisville leaves responsibility for coordination primarily to each individual high school or career magnet academy. In Fort Worth, the Chamber of Commerce is the lead employer organization. However, the emphasis on creating work-based learning experiences is still quite new in Fort Worth, so the challenges involved in coordinating and simplifying employer provision of work experiences have yet to become pressing.

6. Successful high school reform requires employers not only to provide work experiences to students but also to help teachers and schools change the routines of traditional classroom instruction.

The primary focus of this study is the role of employers in efforts to improve student achievement through closer links between schools and employers. Yet while employers can catalyze, support, and create pressure for change, reform can only succeed if instruction and learn-

ing change inside the schools. Student experiences in a workplace cannot substitute for challenging and effective classroom curricula and teaching techniques.

Employers and their associations can help schools and teachers in their efforts to introduce more experiential and contextual learning methods. In the communities we studied, teacher externships that give classroom teachers a chance to visit and experience modern workplaces are a frequent component of professional development efforts. In several cities, employers participate in student projects as advisors, mentors, and also judges of student work.

Changes in instruction and learning also require support from school and district administrators for changes in school schedules, curricula, and learning experiences outside the school building. Employers can encourage school district officials to provide support for innovation through new graduation requirements, standards and assessments that encourage contextual learning in and outside schools, coherence and integration among diverse system reform initiatives, and resources and flexibility that enable schools and teachers to make the heavy commitment of time and energy needed to turn urban high schools around.

THE CHALLENGES AHEAD

The critical question for these communities is: Can current reform efforts be sustained? Will the efforts undertaken in recent years to raise academic standards and bring real-world experiences into the high school curriculum be given the chance to take root and grow? Given that few, if any, business, school, or civic leaders in these communities would maintain that their schools have turned the corner, will the public and business leaders themselves become too impatient?

The case studies presented in this volume highlight four key challenges that confront every community trying to encourage the transition to more contextual learning, more varied learning experiences in workplaces and the community, and greater collaboration between schools and employers. These are:

- Moving from small pilots to significant scale;
- Demonstrating improved student and school outcomes;
- Building and sustaining support; and
- Integrating school-to-career practices into a coordinated high school reform agenda.

Moving to Significant Scale

By and large, the communities studied here have made significant progress in providing workplace learning opportunities to young people. In Boston, 17 percent of high school students are enrolled in a formal school-to-career pathway. Fort Worth provides a week-long work-based mentoring and learning program to two-thirds of seventh graders. In Philadelphia, over 2,200 juniors and seniors participated in paid one- or two-day-a-week work-based learning experiences last year, and another 6,200 had service learning experiences in their communities. Work-based learning opportunities in Jefferson County, primarily co-op placements tied to the thematic curriculum of the district's 14 career magnet academies, reach over 4,000 students a year. These numbers reflect hard work and steady progress.

At the same time, each community is committed to expanding the number of students whose curricula include learning experiences outside the classroom. While none of the four communities feel they have reached the limits of employer participation, several may have already secured the easier commitments from local employers. With larger firms and other employers that are traditionally active in civic affairs "on board"—including local and state government and hospitals, universities, and other non-profits—the target of recruitment shifts to smaller firms that have less internal training capacity and that operate in industries with less ability to assimilate young people for any length of time. Mobilizing and engaging these smaller employers will be a challenge.

As noted above, these case studies highlight the importance of stable, staffed *local intermediary organizations* in recruiting and organizing employer involvement, particularly among smaller employers. The Private Industry Council in Boston and the Education for Employment Office in Philadelphia provide services that are highly valued by employers. In Louisville and Fort Worth, the community's business and education leadership has begun to consider how best to structure these services for employers, but the commitment to a community-wide operational intermediary has not yet been made.

The expansion of work-based learning as a core component of the high school curriculum also requires many more teachers to adopt new instructional methods. In Fort Worth, this concern has motivated the district's decade-long strategy to give top priority to professional development in applied learning practices. The other communities we studied are also beginning to explore ways to increase the scale at which teachers are trained to introduce contextual teaching methods.

Demonstrating Improved Outcomes

In urban education today, there is great and justified impatience with the lack of measurable improvement. The public wants to see better student outcomes. The business community wants results from its investments. Demonstrating such gains is a critical challenge for the leadership in every community.

In the four urban school districts we studied, as in most cities, academic achievement lags behind the national average. The high schools in these communities face a particularly daunting challenge. Compared to elementary or middle schools, high schools are relatively rigid institutions and tend to be more troubled as learning places. Few reforms implemented in urban high schools have demonstrated definitive improvement in standardized test scores. School-to-career initiatives, including those in the four communities we studied, share a similar frustration: their students have yet to show consistent improvement in reading, math, or other standardized tests.

CED's policy statement, *The Employer's Role in Linking School and Work* concludes from available research that school-to-career initiatives have demonstrated promising outcomes for students in at least four areas: higher rates of college-going, lower dropout rates, stronger academic focus as evidenced by course selection, and more rigorous math and science curricula.[4] Perhaps the most important of these is the rate of admission to and persistence in college. In Boston and Philadelphia, the percentage of participants who continue to postsecondary education from these initiatives is higher than the district average, which is promising evidence for programs that have targeted young people identified as unlikely to attend college.

The Boston Private Industry Council compared post-high school outcomes of 1993, 1994, and 1995 Boston Public School graduates who were enrolled in ProTech, the city's most mature school-to-career program, to outcomes for their peers locally and nationally. Graduates show higher rates of postsecondary attendance, completion, and employment, and higher wages than the comparison group of ProTech eligibles who did not enroll. Benefits appear to be greatest for minority participants.[5]

ProTech students reported higher college-going rates the year after graduating high school (78 percent compared to 72 percent). In the 1993 cohort, 64 percent of ProTech students had completed a postsecondary certificate or degree four years after high school, compared to 44 percent of the comparison group. Black participants across the cohorts had a 74 percent retention and completion rate compared to a 65 percent rate among their counterparts in the comparison group. Approximately 87 percent of school-to-career students reported working, compared to 75 percent of the comparison group. ProTech students also reported higher earnings ($8.92 as the mean wage, compared to $8.10 for the comparison group). The mean wage for black

ProTech graduates who were enrolled in college and also employed was $8.17, compared to $6.77 for the enrolled and employed comparison group.

Philadelphia provides additional evidence of progress. As reported by the district for the school year 1996-97, the attendance rates for eleventh and twelfth graders engaged in paid work-based learning was 88 percent, compared with 79 percent for the district as a whole. The drop-out rate was only 3.4 percent for students in paid work-based learning, compared to 11.5 percent for all eleventh and twelfth graders. And 94 percent of eleventh and twelfth grade students engaged in paid work-based learning graduated from high school, compared to 86 percent overall.

The trends identified here are consistent with other, more rigorous, research on school-to-career models. In a random-assignment evaluation, for example, New York City's career magnet high schools have demonstrated a number of positive outcomes for low- and moderate-income minority and immigrant students.[6] Graduates have accumulated more college credits, have higher salaries, and have avoided high-risk behavior better than the control group. Still, as is often the case in high school reform efforts, enrollment in career magnets has yet to prove effective in raising standardized test scores.

In the current environment, the difficulty of demonstrating measurable improvements in academic achievement is a political liability. The public's desire for proof of success may outrun the ability of these and other urban communities to translate systemic reforms into visible short-term results. If this happens, both public and political support for long-term reforms may weaken.

Building and Sustaining Support

The initiatives underway in these four communities require two kinds of support to survive and grow. The first is political. The second is financial.

As noted above, these efforts must begin to show results that parents and the public value. They must do so quickly, more quickly perhaps than district leaders would prefer and than it may be reasonable to expect. However, patience is rare in politics. Without positive outcomes for students and schools, support for these strategies and may be replaced by demands for more extreme interventions, such as privatization and vouchers.

In this environment, the ability to stay the course over the long-term depends upon a community's effectiveness in building and sustaining political support for current reform efforts. One strategy is to help focus the system and its partners on achieving reasonable, yet meaningful, results. In Boston, the Measurement Subcommittee of the School-to-Career Partnership Committee, which has struggled to define measurable outcomes beyond student test scores, has helped set the terms for employer and civic support of the district's change strategy. In each community, school reform leaders are finding a need for richer data on system-wide progress and for more effective outreach and marketing to parents, the public, the business community, and the political leadership.

Developing large numbers of high-quality work-based learning slots can be part of this political-support strategy. Employers involved in school-to-career initiatives report considerable satisfaction. Supervisors and co-workers enjoy mentoring youth. Some employers screen students and find a few who will work for them in the summer or upon graduation. Employers who provide longer paid internships report that students "earn their pay" after a relatively short break-in period.

Generating sustained political support for any reform is difficult, given the short cycle time allowed almost any reform strategy. Political support in Washington for linking school and work has already passed its high-water mark. The federal School to Work Opportunities Act, which has supported local experimentation

nationally, including programs in the four communities in this study, will sunset in 2001. The momentum that its seed grants has provided is beginning to slow, and new issues in education reform are moving onto center stage in federal and state policy. School-to-career efforts have been a favorite target of right-wing criticism of federal intrusion in local education. This campaign has undermined local support in some areas for community partnerships that emphasize school-employer links.

In this environment, demonstrating results and telling convincing stories of change have become a high priority. Moreover, political support from local employers is now particularly important, since charges of extremism levelled at business leaders have limited credibility.

Linked to the challenge of political support is that of financial support for these innovations. Each community has taken advantage of federal school-to-work funds, as well as contributions from national and local foundations, the local business community, and other local resources. Federal funding (and some key philanthropic support, as in Philadelphia's Annenberg grant) is winding down.

Over time, school districts can redirect some existing funding streams to support pedagogical reforms, as Fort Worth and other districts are doing with professional development funds. But school systems will continue to require temporary increments in resources to redesign curricula and retrain teachers, two critical but relatively expensive and less-than-glamorous systemic reforms. Moreover, permanent increments in resources are likely to be needed for new functions, including the "connecting activities" that help employers design and offer work-based learning opportunities and support students in them.

In the coming years, to make resources readily available for these system-building activities, states will have to take over commitments that the federal government has initiated. An example of what states might do comes from Massachusetts. School-to-career advocates there, with support from the business community, have won state legislation that provides a continuing matching-grant subsidy to intermediaries that provide connecting activities. The amount of the match is based on the wages paid by local employers to students in local school-to-career programs.

Interviews with employers and others in the four communities indicate a resistance to state subsidies for student wages or the costs of training students, due largely to a general antipathy to government red tape. Subsidies for "connecting activities" are another matter, as the Massachusetts legislation indicates. Employers feel they should not have to absorb the financial or "hassle" costs of participating in school-business partnerships. Even large employers testify that no-cost support services are an important incentive for their participation.

Integrating School-to-Career into a Coordinated High School Reform Agenda

In many cities, school-to-career is regarded as "another program," an add-on to the core curriculum that can be of benefit to a small slice of a school's student body. In contrast, although their level of commitment varies significantly, reformers in the four cities we studied regard school-to-career strategies as important to their systemwide reforms.

Integrating school-to-career principles and practices into a district's overall reform agenda is not easy. There are many obstacles to such coordination, even in communities where school and business leaders want to move in this direction. For example, high-stakes tests, as in Kentucky, may promote teaching that helps students improve academic performance. However, the pressure to raise test scores can crowd out innovative pedagogy and limit activities available to students during school hours, for fear of taking students off task.[7]

Even school systems less driven by high-stakes tests must work out, in practice, the relationship between the standards and school-

to-career movements. Experiential learning, community partnerships, and other school-to-career practices can motivate many alienated and less-prepared students to take learning seriously and to reach higher standards. However, integrating these activities into the overall reform agenda of the district does not happen automatically. District and school administrators are at least as likely to fear school-to-career practices as a distraction from pursuing higher academic achievement as they are to regard school-to-career as a way to re-engage young people and motivate them to learn.

One factor contributing to this fear is the tendency of many districts (and states) to locate responsibility for their school-to-career efforts in vocational education offices. This tends to make it more difficult to engage academic teachers and to inspire the confidence of parents. Even in communities where the divide between academic and vocational education is not particularly pronounced, housing these efforts administratively within vocational education can weaken support for them. Equally important, doing so frequently results in a fragmented reform agenda, where vocational education reforms and mainstream academic reforms run in parallel and squander opportunities for strengthening each other. In communities where this dynamic exists, which include Fort Worth and Louisville, school-to-career initiatives run a greater risk of weaker support and marginalization.

Addressing this issue—the relationship of school-to-career efforts to secondary vocational education on the one hand and to comprehensive high school reform on the other—is critically important. The future of these efforts depends upon how clearly school-to-career is identified with strategies for raising academic performance, not just imparting better job-related skills.

The evidence of these case studies, and of the school-to-career movement more broadly, is that the more fully school-to-career practices can be integrated into the community's overall reform strategy, and the more district leaders and their partners understand it in this way, the more likely these efforts are to survive, mature, and improve the present learning and future prospects of urban high school youth. This task, however, is a difficult one. How well these communities and others address this challenge will be a major determinant of the longevity, and ultimate impact, of employer and community efforts to reform public education by strengthening the links between school and work.

SUMMARY OF THE CASE STUDIES

BOSTON

The City: Boston, with a population of about 600,000, is a relatively small city, although it is the core of a much larger metropolitan area. In the 1990 census, the median household income in the city was just under the national average.

Boston's economy has been volatile in recent decades. Since 1980, tens of thousands of jobs have been gained, lost, and gained again; unemployment is now well below national averages. The local economy is solidly based on knowledge-based services. Health care accounts for one in seven jobs, and several leading financial services firms (e.g., John Hancock and Prudential) have headquarters or substantial offices downtown.

The Schools: The Boston Public Schools (BPS) enrolled 62,000 students in 1996-97, 80 percent from ethnic minorities. Almost 17,000 students attend 16 high schools (three are elite "examination" schools and one concentrates on vocational/technical education) and several small "alternative" and "charter" schools.

Major Characteristics of Education Reform: In 1982, business, community, and educators united to create the Boston Compact to improve opportunities for low-income, inner-city youth. This agreement committed employers to hire BPS students for summer jobs and BPS graduates for permanent employment, and it committed area colleges to boost enrollment of BPS graduates. Implementation has rested in the Boston Private Industry Council (PIC), one of the nation's most creative and aggressive organizations involved in organizing and brokering community efforts in youth and adult education and in work force development.

In the early 1990s, the PIC designed and brokered two initiatives, working with high schools, employers from selected sectors, and postsecondary education institutions. The first was the National Academies of Boston, set up with support from the National Academies Foundation. Boston now has three high school academies—in finance, public service, and travel and tourism. Some 50 employers provide work-based learning opportunities to Academies students.

At about the same time, ProTech began as an effort to prepare students for health care careers, grouping juniors and seniors to follow a regimen of special courses at school and work-based learning at hospitals. ProTech now counts nine programs covering five occupational areas and operates at six high schools.

Despite such initiatives, BPS did not embrace systemic reform fully until the 1995 appointment of Thomas Payzant as superintendent. Within his vision of general school reform, he determined to use school-to-career "as a lever for school improvement." The BPS has moved toward "whole school reform" based on career pathway programs building on—and going beyond—the models of the Academies and ProTech.

Governing the employer side of school-to-career is the School-to-Career Partnership Committee, composed of business, education, and community stakeholders. It is staffed and coordinated by the PIC, which funds its broad roles by fundraising from foundations, corporations, and government agencies. The state legislature has recognized the importance of the PIC's intermediary functions with legislation to provide one dollar of state support for every two dollars the PIC generates in wages from private-sector employers for structured work-based learning.

Boston has had remarkable success in recruiting employers to participate in school-to-career, creating the possibility of institutionalizing this approach on a systemwide basis. About

17 percent of secondary students are enrolled in a formal school-to-career pathway, and 200 employers are involved in these programs.

Yet challenges remain. Perhaps most important, it is too early to evaluate these efforts to improve student outcomes, even with Boston's strong employer infrastructure for education and long-standing history of organized employer involvement with schools.

Nevertheless, the Boston experience offers several broad lessons in building employer involvement in school-to-career initiatives:

- Coordinated, unified action by private-sector leaders sends the signal to employers that participation in school-to-career efforts is beneficial—and expected of active members of the business community. Over the long term, coordinated, unified action builds trust among partners with diverse missions, cultures, and priorities.
- Sustained employer involvement depends upon clear goals and reliable measures of progress. School and business leaders are committed to measuring progress in implementing school-to-career and achieving results for young people.
- Quality school-to-career efforts require a stable, credible intermediary agent. Coordination, communication, and linkages among employers, schools, and students do not occur automatically; a third-party organization can lower employers' costs of participating in the initiatives.
- To reach significant numbers of young people with high-quality school-to-career programs requires not only new employer relations with schools but also changes in teaching practice supported by new curricula, standards, and assessment. Employers and other community partners can support and press for changes in the classroom, but classroom reform ultimately depends upon the creativity and commitment of teachers and the support that teachers receive from district and school administrators.

FORT WORTH

The City: Fort Worth has a population of roughly a half million people. The city was badly hurt by the collapse of the oil industry in the last decade and the downsizing of major defense employers in this decade. Manufacturing continues to be important—the area is home to over 700 high-tech companies—but services have become the largest sector. They account for 27 percent of total employment and have provided 48 percent of job growth during the 1990s. Health services and business services are the largest sources of growth.

The Schools: The Fort Worth Independent School District (FWISD) is the fourth largest in Texas. Roughly a third of its 76,000 students are white, a third are African-American, and a third, Hispanic. In 1995-96, 57 percent of the students were officially classified as economically disadvantaged. On standardized tests, its students score higher on average than those in neighboring Dallas but not as high as those in Houston.

Major Characteristics of Education Reform: Fort Worth business leaders have worked closely with the schools for over a decade, with the Chamber of Commerce taking the lead in forming partnerships between the district leadership and individuals schools. These efforts have had three goals: 1) producing graduates equipped with the skills and knowledge needed for success in an increasingly technological world, 2) familiarizing students with the available careers and opportunities, and 3) educating students so they can apply outside the classroom what they learn in school.

The core elements of the Fort Worth approach include the following:

- *Collaboration began around curricular goals, rather than offering work experiences for students.*

  Responding to employers' skepticism about the extent to which the schools could improve, business and school leaders began their collaboration cautiously. The FWISD first asked for information to guide reforms

rather than for funds or for opportunities for student work experiences. In response, the business community helped the school district, teachers, and parents understand the changing economy and the kinds of skills employers seek in public school graduates.

- *Reforms have emphasized applied learning in the classroom and support for teachers as they change instructional practice.*

  Fort Worth is one of the nation's leading school districts in terms of its commitment to using applied learning techniques in the classroom. For most of the past decade, the district has invested in professional development opportunities for teachers to increase their knowledge of and facility with active, experiential pedagogy.

- *Fort Worth has demonstrated an ability to implement programmatic reforms on a large scale.*

  The FWISD has concentrated on implementing reforms it believes are sustainable for large numbers of students and teachers. In addition to the applied learning effort, Vital Link, a week-long, work-based learning program, reaches two-thirds of seventh-graders. The district supports both efforts primarily through its own budget, not outside funding sources.

- *The district has moved gradually to offer high school students work-based learning experiences.*

  While Fort Worth has emphasized elementary and middle school reforms, the Chamber, employers, and the district have begun developing internships and other work-based opportunities for high school students. These programs are small, but the Chamber of Commerce, the district leadership, and the Career and Technical Education staff are committed to expanding work-based learning.

- *Fort Worth has borrowed from and linked with others, making creative use of outside expertise, strategies, and materials.*

  Part of Fort Worth's strength has been its willingness to seek assistance from national experts and become involved in national networks and demonstrations, such as Vital Link and New Standards. This has enabled Fort Worth to benefit from high-quality programs and materials without bearing the full development costs.

- *School reform is understood to be a long-term, incremental process.*

  Fort Worth has built its reforms step-by-step, with consistent attention to design, implementation, and evaluation. The FWISD leaders and their external allies appear to appreciate the difficulty of changing practice in large school districts and have made a corresponding long-term commitment to the task of school reform.

For Fort Worth, the biggest challenges to continued progress in linking schools and work lie in the community's willingness and ability to integrate work experiences into high school programs at a scale that would reach a significant percentage of students. There is growing commitment to this strategy for motivating young people and expanding applied learning into real-world settings, and early experiments in generating work experiences in several industries show promise. But to expand these efforts, many more employers will have to participate, and the Chamber and other employer groups will have to increase their efforts to recruit and support additional employers.

Like so many districts around the country, the FWISD must also decide where work-based learning "fits" in its plans. Is work-based learning part of the upgrading of technical education, or is it part of a strategy for changing the nature of all high school education?

LOUISVILLE/JEFFERSON COUNTY

The City: Jefferson County's one million people (270,000 in Louisville) enjoy incomes above and unemployment below national averages. Louisville is headquarters to Humana,

Inc., and Kentucky Fried Chicken, hosts the main air hub of United Parcel Service (UPS), and counts General Electric as its largest employer. The bulk of employment in the area, however, is relatively "low tech," provided by small firms or subsidiaries of firms headquartered elsewhere, with limited professional, managerial, and technical opportunities.

The Schools: Jefferson County Public Schools (JCPS), with 96,000 students and 5,756 teachers, is Kentucky's largest school district and the 24th largest in the United States. It encompasses 87 elementary schools, 23 middle schools, 20 high schools, and 21 other learning centers. About 30 percent of its students are minorities.

Kentucky has long lagged in educational performance. Late in the last decade, it ranked 49th in the percentage of adults with high school diplomas.

Major Characteristics of Education Reform: In 1989, the State Supreme Court declared the public school system unconstitutionally inequitable. A year later, pushed by civic and business leaders (Louisville's prominent among them), the legislature passed the Kentucky Education Reform Act (KERA), a landmark in state educational reform initiatives. KERA equalized educational funding for poor and rich districts, increased local authority and accountability, mandated performance-based assessment of academic achievement, and changed curricula to include certain citizenship and work-related skills.

After seven years, significant gains have been made in a number of areas. Progress is strongest in the early grades, where both KERA-inspired and national test scores are improving. Students in poor districts score as well on standardized tests as those in wealthier districts. But other areas show little change. Dropout rates have not improved, test scores are far from KERA benchmarks, and scores on national college admissions tests remain flat.

Over the past two decades, Louisville and Jefferson County employers have shown a remarkable commitment to improving the performance of local schools. At the state level, they have actively promoted standards-based reform through KERA. Jefferson County business leaders have played a central role in partnerships to upgrade vocational education, provide at-risk students with supports that help them stay in school and learn, and offer work-based learning experiences in their own firms and in innovative school-based enterprises.

The Louisville/Jefferson County experience linking employers with the public schools highlights the importance of several strategies:

- *Relationships among Louisville's business, school, and political leaders have been personal, deep, and directed toward improving the quality of education and the work force.*

  During the 1980s and 1990s, the community has benefited greatly from a rare stability in leadership that included the mayor, the school superintendent, and the city's most prominent business leader. This stability—and the common vision that accompanied it—has enabled the business community to come together around several significant education reforms, without preventing new leaders and initiatives from emerging.

- *The leaders of Louisville's business community understand that the region's long-term economic well-being depends upon its ability to continually upgrade and improve the quality of its K-12 and postsecondary education systems.*

  For a community that attracts significant manufacturing, transportation, and other blue-collar industries, the quality of the local work force is critically important. For this reason, Louisville's employer and economic development organizations have consistently identified education reform generally and school-to-career initiatives specifically as a key component of long-term economic development strategy.

- *Louisville's business community has an impressive tradition of involvement in, and leadership*

of, the governance and planning of regional education and workforce initiatives. However, it has been slower to recognize the importance of a staffed, stable institution that can be the operational link between schools and employers who seek to provide work experiences for students.

The school district has kept the staffing of its school-to-work office lean, and local planning bodies lack the capacity to take on operational responsibilities. This may be changing, however. The state school-to-work system created a regional labor market organization that has taken on certain convening and coordinating roles, and the new Workforce Development Council's School-to-Work Committee is debating how best to support local efforts.

- *The vocational programs are committed to achieving the same high standards as the system's academic programs.*

  When business and school leaders decided to revamp Jefferson County's vocational education system in the late 1980s, a remarkable turnaround in the quality of local programs resulted. Poorly performing two-year vocational centers were replaced by four-year career magnet academies housed in comprehensive high schools with new equipment, facilities and curricula. Today, the county's vocational programs are striving to reach the high standards set by KERA.

In the coming years, Louisville and its employer community face a number of challenges as the county moves to expand and institutionalize its high school reform. One challenge will arise from efforts to offer more and deeper work-based learning opportunities in the face of pressure to improve student performance on state exams. The tensions between standards-driven reform and school-to-career strategies may intensify. Louisville will also need to find an affordable way to coordinate growing numbers of school-business interactions, particularly in light of the school system's emphasis on school-based management and the resulting decentralization of partnerships between single schools and employers. A third major challenge is achieving an effective balance between long-term educational/work force strategies and short-term pressures that a tight labor market places on particular firms. In a community where education is seen as an economic development tool, this balance may sometimes be difficult to sustain.

PHILADELPHIA

The City: While Philadelphia is still the core of the nation's fourth largest metropolitan area, its population declined from 2.0 million in 1960 to 1.5 million in 1995. Total employment fell somewhat less, by about 13 percent, but employment has fallen in every sector except services, which added 46,000 jobs from 1982 to 1994. The decline has been dramatic: in 1972, manufacturing provided 23 percent of city employment; by 1994, that proportion had dropped to 9 percent. Unemployment has been and remains above the U.S. average.

The Schools: The Philadelphia School District has long been labeled one of the nation's worst. Its 258 schools, with 218,000 students, are plagued by bureaucracy, violence, pregnancy, truancy, underachievement on almost all academic measures, and astronomical dropout rates. One bank vice president says, "The high schools are just pumping illiterates into the marketplace."

Major Characteristics of Education Reform: A report commissioned by regional business leaders attributed the region's sluggish economy in part to a labor force "ominously out of synch with that of more successful regions [and] . . . skewed toward the low end of the educational spectrum." One of its key recommendations: "radically reform the region's troubled public school systems."

The school district has made a strong commitment to reform, with the goal, says David Hornbeck, school superintendent since 1994, of making Philadelphia "the first major city

that educates all of its children to high standards of competence." Toward this end, business, community, and civic leaders have mobilized to work with the schools on an ambitious reform agenda called Children Achieving. They have contributed vision, leadership, and financial resources.

Children Achieving is a systemic plan, calling for changes in governance, accountability, school structure, curricula, pedagogy, staff development, technology, and children and family supports. One component is a school-to-career strategy that stresses business involvement in providing rich work-based learning experiences to the upper grades and gradually extending such opportunities to lower grades.

Philadelphia has made significant progress on its agenda, with employers playing a key leadership role. In the high schools, growing numbers of employers provide work-based learning as a core element of the educational process. As part of its broad educational agenda, the city has created—and begun to implement—one of the nation's most complete school-to-career visions.

This reform effort is guided and supported by Greater Philadelphia First (GPF), an organization of the CEOs of the region's 35 largest employers. The School-to-Career effort is guided by a community-wide School-to-Career Leadership Council, led by the former CEO of CoreStates Bank. Day-to-day coordination of school-employer relations is the responsibility of the Education for Employment Office within the school district.

Since the announcement of Children Achieving, the Philadelphia School District has reorganized its six large regions into 22 "clusters," each centered on a comprehensive high school. Each comprehensive high school has been restructured into Small Learning Communities of 200 to 400 students. As of the fall of 1997, 15 of the 22 clusters had formally adopted school-to-career principles at all levels—elementary, middle, and high school.

Within two years, according to district plans, a Cluster Resource Board will support each cluster, including developing work-based learning opportunities for high school students. These boards will be composed of employers, city officials, teachers, parents, students, unions, universities, school board members, police, community organizations, and other stakeholders.

In 1996-97, over 2,230 students participated in paid, one- or two-day per week work-based learning experience. This included 31.4 percent of the junior/senior population in the 60 Small Learning Communities that had school-to-career at the time. These school-to-career jobs were provided by 305 employers. The district's five-year goal is 10,000 one-day and two-day paid internships, encompassing roughly half of the district's juniors and seniors.

However, the reform process has a very long way to go. Philadelphia finds itself in a race between the complex, slow pace of change in urban schools and the limits of political and public patience and support. A sympathetic nonprofit head calls the effort "the last best chance for this school system."

While the case study found little opposition to the goals of school-to-career, participants and observers expressed concerns about the pace and quality and even the feasibility of the school system's reform agenda. These include:

- Is the projected number of deeply committed employers feasible, particularly in light of the intensity of work-based learning opportunities and the slow growth in the city's employer base?
- Will enough teachers support the reform agenda, or will teachers resist pedagogical changes and new relations with resources outside the schools?
- Will political support be strong enough to give the Children Achieving agenda time to take root throughout the district?
- Will school-to-career continue to evolve as a key component of the district's high school reform agenda?

STON: Making Work-Based Learning a 'e Component of Systemic Reform

Anthony Alongi

Boston has made significant progress in recruiting employers to participate in quality school-to-career efforts and take a leadership position in efforts to expand school-to-career programs across the city's high schools. Challenges remain, however. This case study profiles efforts to create a foundation for broader change in a city with a relatively developed employer infrastructure for education and a long-standing history of organized employer involvement with the public schools.

Although it is still too early to evaluate the impact of school-to-career efforts on student outcomes, the Boston experience offers broad lessons in encouraging and supporting employer involvement. These lessons can be useful for other communities trying to involve employers in large-scale, high-quality school-to-career efforts:

Coordinated, unified action by private-sector leaders sends the signal that participation in school-to-career efforts is both beneficial and expected of active members of the business community. Over the long run, involving employers in a coordinated, unified campaign builds the trust and willingness to collaborate that form a strong foundation for future efforts.

Sustained employer involvement depends on clear goals and reliable measures of progress. Boston's school and business leaders are committed to measuring progress toward implementing school-to-career in the city—and toward achieving results for young people. This emphasis on goals and measurement promotes accountability, and that is the bedrock for trust, credibility, and community consensus.

Quality school-to-career efforts require a stable, credible intermediary agent. Strong coordination, communication, and linkages among employers, schools, and students do not occur automatically; without the aid of a third-party organization, the costs to employers of participating in these initiatives can outweigh the benefits, particularly for the day-to-day management of school-business relationships.

To reach significant numbers of young people with high-quality school-to-career programs requires not only new employer relations with schools but also changes in teaching practice, supported by new curricula, standards, and assessments. Improving student achievement cannot be accomplished without changes in the classroom. Employers and other community partners can support and press for these changes, but those ultimately depend upon the creativity and commitment of teachers and the support that teachers receive from school and district administrators.

BACKGROUND: BOSTON AND ITS SCHOOLS

Demographic Profile

With just under 600,000 residents, Boston is the 20th largest city in the United States.[1] (The metropolitan area is the seventh largest.) As in many Northeast urban centers, Boston's popu-

lation declined from the 1950s through the 1970s. The city population grew in the 1980s, but declined slightly in the 1990s. Ethnic minorities comprise 41 percent of the population.

Boston is home to 10 percent of Massachusetts adults but 17 percent of its economically disadvantaged adults. The numbers are similar for youth: 11 percent of the state's 14-21 year olds and 20 percent of those living in poverty reside in Boston.

Recent Economic History

The median household income in 1990, $29,180, was just under the national average, but extreme swings have characterized Boston's economy since the early 1980s. Unemployment hit 9.7 percent in the 1981-82 recession, then evaporated to 3.2 percent in 1987 as the "Massachusetts Miracle" added 49,000 city-based jobs between 1982 and 1989. In Boston, knowledge-intensive industries, such as health and financial services, fueled this expansion, with some contribution from the defense-industry-buildup.

The ensuing recession hit Boston earlier and harder than the rest of the country. The city lost 68,000 jobs between 1988 and 1992, with peak unemployment of 8.4 percent in 1991. The economy recovered during the early and mid-1990s: 33,000 net jobs were gained from 1992 to 1995, and unemployment dropped to 5.4 percent. As of March 1997, the unemployment rate in Boston was an estimated 4.1 percent; for the metropolitan area, the rate had fallen to 3.5 percent.

Behind these aggregate numbers lies a significant shift. In the space of 15 years, 38,000 new service jobs replaced 23,000 lost manufacturing jobs. Manufacturing's share of city employment fell from 10 percent in 1980 to 6 percent in 1995; service employment rose from 34 to 41 percent. Health care now accounts for one in seven Boston jobs, and several leading financial services firms (including John Hancock and Prudential) have headquarters or substantial offices downtown.

Even the economy's leading sectors have not been immune from the restructuring of the past two decades, however. To survive in the world of managed care, hospitals are consolidating (e.g., Beth Israel with Deaconess and Massachusetts General with Brigham and Women's). Since 1995, NYNEX has announced significant layoffs of both technicians and management staff, and its 1997 merger with Bell Atlantic promises further restructuring. Several large banks have merged (e.g., Bank of Boston with BayBank, Fleet with Shawmut).

The Boston Public Schools

In recent years, enrollment in the Boston Public Schools (BPS) has remained steady at around 62,000. Four-fifths of the students come from ethnic "minorities," including African-American, Asian-American, and Hispanic youths. The system has 16 high schools, including three "examination" schools to which entry is based on an eighth-grade test, plus several alternative schools and middle colleges. High school enrollment totaled 16,856 for the 1996-97 school year. Technical and vocational education is concentrated in Madison Park Technical and Vocational High School.

BOSTON EMPLOYERS AND SCHOOL-TO-CAREER INITIATIVES

Boston's long-standing history of organized employer involvement with schools, which now provides a foundation for broader change, has taken place in roughly three stages:

- **Stage 1: The 1982 Boston Compact.** This landmark agreement committed the city's business community, political leaders, and public schools to improving the quality of education and connecting youth to jobs.
- **Stage 2: School-to-Career Initiatives.** As the 1988 renewal of the Boston Compact approached, the futility of improving youth employment opportunities without substantial school reform became apparent. The renegotiated Compact emphasized decen-

tralizing BPS decision-making authority to improve the environment for innovative administrative structures. Within two years, the BPS and the PIC had launched two school-to-career pilot programs—the National Academies of Boston and ProTech.

- **Stage 3: Career Pathways and Whole School Reform.** In 1995, the appointments of Thomas Payzant as BPS superintendent and Kathi Mullin as BPS director for school-to-career greatly strengthened the district's commitment to embarking on systemwide school-to-career reforms. Both Payzant and Mullin see school-to-career as an important element of comprehensive systemwide improvement.

Stage 1. The Boston Compact

In the early 1980s, Boston's education and employment communities recognized a serious, deepening problem: few BPS graduates had the skills to work in jobs that were in high demand or to succeed in postsecondary education. Local leaders in city government, the public schools, higher education, the employer community, and organized labor came together to reform K-12 education and improve the employment prospects of public school graduates. The result was the 1982 Boston Compact, a landmark agreement committing the city's business community, political leaders, and public schools to improving the quality of education and connecting youth to jobs. The schools agreed to improve instruction in basic reading and math skills. In return, employers agreed to give BPS graduates priority in entry-level hiring.

Since 1982, implementation of the Compact's employment goals has rested primarily with the Boston Private Industry Council (PIC). Established under the federal Comprehensive Employment and Training Act of 1978 and given broader authority with the federal Jobs Training Partnership Act of 1981, the PIC was already the primary broker between schools and employers, finding placements for students in summer and part-time, school-year jobs. A key provision of the first Compact was BPS support of Career Specialists, hired through the PIC and housed there and at the schools. These staff have had responsibility for student case management and for maintaining relations among schools, employers, and students.

Revised in 1988 and again in 1994, the Boston Compact has spurred initiatives in school-

CURRENT GOALS OF THE BOSTON COMPACT

As renegotiated in 1994, the Boston Compact consists of five broad goals, all of which strengthen the city's school-to-career effort:

1. **Improved access for young people to employment and higher education** is the most explicit goal in prescribing effective school-to-career transitions and the fundamental reason for engaging in and financially supporting district and community school-to-career activities.

2. **Increased commitment to innovation** encourages exploration in pedagogy and administrative structures. This commitment has benefited both new and existing high schools through initiatives in school-based management and charter schools.

3. **A comprehensive curriculum, high standards, and new methods of assessment** have come in the form of new BPS Learning Standards and Curriculum Frameworks. These frameworks encourage the use of real-world "key questions" as an instructional tool, as well as the use of student products and portfolios to demonstrate acquisition of skills and knowledge that will help young people succeed in college and/or careers.

4. **Professional development** opens the door to opportunities for teams of teachers and community partners to receive sustained, in-depth training on techniques such as project-based learning.

5. **Support for parents and families,** manifested in part through surveys of satisfaction, will help the system respond to the wider community as well as to employers.

based management, youth apprenticeship, and summer jobs employment. Over time, the emphasis has shifted, from the original general agreement to hire (or to enroll, in the case of higher education) more BPS graduates toward a support structure for school-based reforms and, most recently, a vehicle for combined educational reform and work force development.

Stage 2. School-to-Career Initiatives

In the 1980s, the PIC focused on placing students in short-duration summer or part-time jobs, with little or no connection between the work and school. As the 1988 renewal of the Boston Compact approached, the futility of improving youth employment opportunities without substantial school reform became apparent. "Before we hired them . . . we thought these kids would be rotten kids," an employer explained in an interview for this case study. "Once we realized that BPS students were good kids, not automatic dead-ends, their lack of basic skills—and the schools' role in supplying those basic skills—became the central issue."

The renegotiated Compact emphasized decentralizing BPS decision-making authority to shift more management power to the level of individual schools. The idea was to improve the environment for innovative administrative structures, which would, in turn, support an array of school-based programs for enhancing students' basic and employability skills.[2] Within two years, the BPS and the PIC had launched two school-to-career pilot programs—the National Academies of Boston and ProTech. Both arose directly from the work force needs of growing service industries and both quickly gained the support of specific segments of the employer community.

The National Academies of Boston

The National Academies of Boston are members of the National Academy Foundation (NAF), a nonprofit organization created in 1988 under the leadership of the American Express Corporation. NAF supplies 165 member programs in 30 states with an industry-validated curriculum that is updated every two or three years with the input of local partners. Academy students take a regular course load plus two special courses per semester during the 11th and 12th grades. Their work-based learning activities include mentoring for juniors, paid summer internships between the junior and senior years, and year-round, senior-year employment.

Boston's academy programs are in Travel and Tourism (since 1990, with East Boston High School), Finance (since 1991, with Hyde Park High), and Public Service (since 1992, with Dorchester High). About 50 employers provide internships across the three academy programs; 24 of them have representatives on the industry-led Advisory Boards that consult with each program on policy and operations, focusing primarily on internship needs, recruitment strategies, and curriculum development. A director and an assistant director, assisted by school-based Career Specialists, manage the programs. The staff are employed by the PIC. NAF has supplied start-up financial support, curriculum frameworks, and ongoing corporate contacts for additional resources.

ProTech

ProTech was created by the PIC, BPS, and several of Boston's largest hospitals: Boston City Hospital, Brigham and Women's Hospital, Deaconess Hospital, Massachusetts General Hospital, New England Baptist Hospital, and New England Medical Center.[3] Originally designed to prepare students for careers in health care and to address hospital labor needs, ProTech has added an additional industry cluster each year. It has encountered little trouble recruiting enough employers for one to three classrooms of students for each cluster or in getting high schools to bid to supply those students.

In their last two years of high school, ProTech students are grouped together for academic and technical classes. For example,

in Health Care this course work includes English, science, a special health care class, and other subjects that reinforce concepts and skills students learn at worksites. In addition, a variety of work-based learning activities take place at the worksite, ranging from clinical rotations and part-time job opportunities in the junior year to paid, full-time summer employment and continuing part-time employment during the school year for seniors and postsecondary students. Program guidance comes from a leadership group, typically PIC staff and senior human resources personnel from employers and schools.

With expanded funding under the federal School to Work Opportunities Act, ProTech now has five programs: Health Care (since 1991, with Boston, Brighton, and English high schools), Financial Services (since 1992, with Boston and Charlestown high schools), Telecommunications and Utilities (since 1993, with Madison Park High Vocational-Technical School), Environmental Engineering and Services (since 1994, with South Boston High), and Business Services (since 1995, with Brighton and Madison Park). In the 1996-97 school year, 65 employers participated.

Stage 3. Career Pathways and Whole School Reform

Until well into the 1990s, the PIC initiated and brokered most of Boston's school-to-career activity. For example, ProTech and the National Academies depended upon industry leaders and the PIC for most of their design and implementation. The PIC approached individual schools, but neither the PIC nor BPS had a strategy for supporting or expanding school-to-career programming throughout the schools.

That has changed since 1995. The appointments of Thomas Payzant as BPS superintendent and Kathi Mullin as BPS director for school-to-career greatly strengthened the district's commitment to embark on system-wide school-to-career reforms. Both Payzant and Mullin see school-to-career as an important element of comprehensive system-wide improvement.

Appointed superintendent in 1995, Payzant had served as Assistant Secretary for Elementary and Secondary Education in the Clinton Administration, as well as superintendent of schools in Oklahoma City, San Diego, and Eugene, Oregon. In Washington, Payzant was a key proponent of federal funding for improving the educational achievement of disadvantaged students, and he came to Boston with comprehensive school reform as his goal. As part of his strategy to achieve that goal, he has been a vigorous advocate for a system of school-to-career opportunities for all Boston youth. As Payzant explains:

We are using school-to-career . . . as a lever for school improvement and reform throughout the school system. School-to-career is part of a comprehensive strategy to set expectations for students and use the workplace as an extension of the classroom. All of our schools can improve academic performance by connecting teaching to real-world experiences.

Boston's primary driver for progress toward this system-wide, whole school reform is the institutionalization of "career pathway" programs of study in the high schools. These programs:

- Last at least two years;
- Focus on a career-related theme;
- Integrate two or more academic subjects each year;
- Devote time to career and personal development; and
- Provide a multi-year sequence of worksite experiences integrated with academic learning.

In programs like ProTech and the Academies, career pathways act as focal points for intensive courses of study that use broad career themes to blend academic and practical instruction. BPS has designated nine high schools, all of which submitted proposals for develop-

ing career pathways into a whole-school reform effort, as "school-to-career." Five of Boston's 19 middle schools are designated school-to-career as well. At both levels, the schools receive special resources, including a full-time school-to-career coordinator, staff development opportunities, and common planning time.

Currently, 2,828 secondary school students—about 17 percent of the BPS total—are enrolled in a formal school-to-career pathway. About 1,680 of these students are in a junior-year or senior-year pathway. The remainder are in ninth- or tenth-grade "pre-pathway programs" or a school-to-career program other than the formal career pathways. The number of juniors and seniors now in formal school-to-career pathways compares to 1,028 students in 1995-96 and 539 in 1994-95. The growth is attributable to both an expansion of existing career pathways and the creation of new ones.[4] The number of employer partners has risen from 46 two years ago, to 108 last year, to about 200 this year.

A strong economy has helped in recruiting employer partners for schools. However, the willingness of Boston employers to participate in school-to-career withstood the recession of the early 1990s, when ProTech and the Academies began. Even today, the employment picture is more complex than one of the private sector desperately seeking skilled workers. Fortunately, existing school-to-career initiatives appear to be well-integrated into most participating firms. When significant restructuring hit health care and finance hard, overall employer commitment to ProTech and the Academies did not diminish. This has remained true even with the lay-off or reassignment of several original human resources contacts, in part due to the ability of the PIC and schools to articulate the goals of these initiatives clearly and consistently to changing employer personnel.

Other BPS School-to-Career Programs

The PIC's employer recruitment strategy emphasizes relatively high-intensity employer involvement with BPS school-to-career efforts. PIC Executive Director Neil Sullivan emphasizes that employers must pass what he calls the Sweat Test: "If it doesn't make you sweat, it's not real." Nevertheless, the PIC balances its push to attract employers to relatively intensive initiatives with aggressive seasonal efforts to engage employers in less-intensive ways, for example by providing *summer jobs*, participating in the *Jobs Collaborative*, and creating opportunities for *job shadowing*.

GOVERNANCE AND MEASUREMENT

Boston's business and community leaders have placed a high priority on measuring the systemwide growth, quality, and impact on youth of school-to-career efforts. Measurement of progress is, in fact, a core element of the partnership between the employer community and the school system. Toward this end, overall responsibility for establishing goals and measurements for the system rests with the School-to-Career Partnership Committee, which guides Boston's school-to-career efforts.

Formed in 1994, the committee includes top-level representatives from key employers, schools, the BPS, community partners, and the PIC. Its co-chairs are Superintendent Thomas Payzant and Dr. Richard Gaintner, president and CEO of Pathway Health Network. The vice-chair is Cathy Minehan, president and CEO of the Federal Reserve Bank of Boston.

To enable the Partnership Committee to track the progress of reforms, an evaluation subcommittee is in the process of defining "dimensions of intensity" for Career Pathway programs. These measures will help the partners quantify the number of students participating at a given level of intensity and facilitate comparisons of student achievement between those that receive more and less structured opportunities. The subcommittee will also administer surveys to selected teachers, employers, and students to determine the extent of systemic reforms, as well as to solicit their views on various school-to-career issues and practices.

Figure 1

Employers, Schools, and Students in Selected Initiatives

(Data are for the 1997-98 school year unless otherwise indicated.)

	Employers	Schools	Students
National Academies (1995-96)	50+	3	210
ProTech	65	6	over 750 (350 high school)
Career Pathway Activities [and structured pathways]	approx. 200 [approx. 125]	12 [10]	2,828 [approx. 1,680]
Summer Jobs (1996)	819	15	3,915
Job Shadowing	170 (Feb.)	9 (grades 9, 10) 5 (grades 6-8)	526 (February/grade 10) 93 (May/grade 9) 457 (May/grades 6-8)

Summer Jobs

For 16 years, the PIC has recruited employers to provide summer jobs for young people. While few of these jobs connect to classroom learning or Career Pathways, the scale of the effort is impressive. Employers have supplied over 3,000 jobs in eight of the last nine summers. The PIC and Boston employers are working to increase these commitments, citing the skills youth learn and the benefits of reducing crime among "idle hands." The goal is 5,000 jobs per summer by the year 2000. In 1997, 819 companies provided 3,915 summer jobs, up from 550 companies and 3,208 jobs in 1995.

The Jobs Collaborative

The Jobs Collaborative is the PIC's year-round counterpart to its Summer Jobs Program. In fact, the PIC uses the collaborative to extend some summer jobs into the school year. In 1996-97, the collaborative provided about 900 after-school jobs for BPS students. Many of these jobs, like summer jobs, are in the secondary labor market (e.g., in retail stores, services, nonprofit administration, financial services, and banking), and few link to learning opportunities.

Summer Jobs and the Jobs Collaborative comprised the main youth employment strategies of the initial Boston Compact. They remain strong anchors for employer recruitment, in part because not every employer will participate in a ProTech or Academy program. Moreover, this type of recruitment strategy represents good marketing alongside the PIC's efforts to recruit employers for high-intensity involvement. Some employers prefer to "get their feet wet" with a lesser commitment, which can open them to investing in longer, more structured workplace experiences for young people.

Job Shadows

Since the 1995-96 school year, the PIC has worked with the BPS to organize a citywide day of job shadowing, held annually on Groundhog Day. These half-day opportunities target tenth-graders. In 1997, 127 worksites provided 526 shadows. The PIC recently expanded the

THE ALTERNATIVE EDUCATION ALLIANCE

With the leadership of Superintendent Payzant, the PIC, and many other community partners, Boston has made significant progress in offering school-to-career opportunities to key segments of "at risk" and out-of-school youth. Initiatives range from enhanced GED programs to innovative juvenile justice efforts.

The *Alternative Education Alliance*, a network of community-based organizations and programs, provides a continuum of services to out-of-school youth who are considered at risk. One element of the alliance is an internship program for about 400 students, with participation from many employers, including CVS, Emerson College, Massachusetts General Hospital, New England Medical Center, the New England Aquarium, Office Specialists, and Stop & Shop. In addition, the PIC's Summer Jobs Program for 1996 recruited 20 new employers to provide work experiences for students in the BPS's alternative education programs. Most of these employers kept students on the following school year.

To help frame the alliance, the PIC has created a "cross-cutting" career pathway—Customer Service—that could assist the efforts of students in retail and hotel/hospitality work experiences to develop competencies needed for management and personal services. With this pathway, the PIC (1) forges a way to help youth move from the secondary to the primary labor market, and (2) encourages employers who offer summer jobs to be more involved with the young people they hire. The Customer Service pathway is only for out-of-school youth, but it may serve as a model as the schools create new pathways.

effort to three days per year and to students in grades six through nine.

Job shadows, which are unpaid and short term, represent key worksite components of early career pathway and "pre-pathway" programs. In fact, most employers who provide job shadow experiences (and many who provide summer jobs) are also involved with either a National Academies program or ProTech.

CURRENT EMPLOYER INVOLVEMENT: ISSUES AND ASSESSMENT

To solicit the views of employers, as well as those of other key stakeholders in Boston's school-to-career efforts, Jobs for the Future conducted 20 interviews. These interviews solicited the reasons employers participate in efforts to link school and work, the costs and benefits they incur, and the most positive aspects of Boston's school-to-career effort. Secondarily, the case study draws on 40 interviews that Jobs for the Future conducted as part of an assessment of ProTech's career pathway in health care.

Why Employers Participate

Employers who have been involved in Boston's "leading-edge" initiatives since their inception have been motivated primarily by *work force development* needs. Fears about the quality of the available labor pool, coupled with the chance to "grow their own" entry-level workers, prompted senior executives to create and implement a longer and more learning-rich work-based learning model than a summer jobs program.

As these initiatives have grown, employers' reasons for participating have broadened. Employers recruited more recently emphasize *community service* as their primary motivation, with workforce development secondary. This probably reflects the expansion of recruitment into new industries and a more varied group of employers in terms of size, location, and work force needs.

Nevertheless, the longer employers remain involved with National Academies and ProTech (and virtually all have stayed on board to date), the more they tend to report work force de-

velopment benefits. Almost every ProTech employer with three or more years of experience interviewed for this study pointed to better entry-level workers as the key reason for remaining involved. Students who stay with a school-to-career employer are "known quantities." Moreover, they typically represent an ethnically diverse population. A representative of one cable company noted that three of the previous year's five graduates were taking full-time jobs with the company: "We never would have guessed this coming on three years ago. But we're getting workers . . . and they're helping us fulfill our [worker residency] requirement."

Still, not all employers recognize the work force development benefits of participating in Boston's school-to-career initiatives. Smaller firms, particularly in environmental engineering services, typically stick with the initiative as a form of community service. Entry-level work at these firms typically requires a four-year degree, as opposed to the entry-level work in health care or telecommunications, where students can see a clear career path immediately upon high school graduation (as well as through two- and four-year colleges).

Because very few employers have left the Academies or ProTech, a large core of experienced employer "champions" now enthusiastically recruits peers. These individuals and organizations are pressing hard to keep the focus of recruiting on work force development motivations. One senior executive noted, "Community service used to be the cost of doing business in Boston: you set up shop here, you contributed. That's changed. . . . There needs to be a return on investment."

Another champion of the work force development benefits of school-to-career is a prominent labor union. To the local chapter of the International Brotherhood of Electrical Workers, ProTech is not only attractive for increasing the skills (and wage potential) of prospective members, but it is also a way to influence young people's views on unions. As one official put it, "This was a no-brainer. . . . We can teach kids what a union job means versus a non-union job."

The Costs and Benefits to Employers

By participating in National Academies or ProTech, employers incur tangible costs. However, few employers have conducted an analysis of the costs and benefits of employing students.

Employers, particularly in large firms, typically charge the cost of student wages to Human Resources rather than to individual departments. "I budget the wages for the coming year and show it to my boss," said one Director of Human Resources. "I can make the argument that it's worth it," she said, because she can point to productive student workers and a number of new hires.

BPS's increased investment in school-to-career has made the business community more optimistic that its participation in the schools can improve not only students' work-related skills but academic achievement as well. Employers feel that Boston schools have become more likely to build upon their own contribution now that BPS has shown a commitment to giving teachers more time to plan activities that connect worksite and classroom learning.

While few supervisors or human resources coordinators have quantified costs and benefits, they gave fairly consistent rough estimates of the commitments their firms make. In interviews, they cited supervisor-related costs ranging from "no effect" to "a slight loss of productivity for a few months." Many interviewees pointed out that this investment in youth has been very close to the time it would take to train an adult. Most human resources coordinators estimated that their firm's participation absorbs a total of five to ten percent of one full-time employee's time; they also felt that it was, as one put it, "the most fun part of my job." For a few particularly committed employers, such as Partners HealthCare and Liberty Mutual Group, coordination with the schools absorbs 40 to 60 percent of one person's time. In these

Figure 2

Employer-Identified Benefits and Costs*

	Benefits	Costs
Tangible	*Productive student workers* *Full-time or part-time graduate hires of program graduates* *More diverse work force pool* *Enrollment in college* Rise in grades Cost savings over temporary or overtime staff	*Student wage* *Time and lost productivity of supervisors/mentors* *Time of human resources or oversight personnel in meetings and coordination* Perks for mentors Scholarships for graduates
Intangible	*Student attitude and maturity* *Skill development for supervisors* *Improved public relations* Improved work force morale Improved relations with a school and positive impact on teaching practices Improved relations with employee unions	"Always having to find work for student to do"

* SOURCE: interviews conducted for this case study; see list of interviewees at the end of this case study. Italic type denotes frequently repeated items.

firms, the coordinator has been responsible for a range of education partnerships, of which ProTech or National Academies may be the most intensive. None of the employers interviewed felt that the commitments entailed overwhelming costs.

Employers pointed to a variety of benefits. Prime among these is the assessment that *students do good, productive work* while in the program and are *capable of entry-level work* by the time (or before) they graduate. Several employers pointed to former student employees who went on to work full-time in addition to attending college (often assisted by a company-sponsored scholarship). Most employers estimated the "learning curve break-even point"—the point at which a student represents a net benefit to the firm—at between six months and a year. Some pointed to the end of a full-time summer as a turning point in student maturity and were pleased that they could reap the benefits of this maturity beyond a one-shot summer job experience.

Employer Views on Key Factors Promoting Progress

In interviews, employers involved in Boston's school-to-career initiatives emphasized three factors that have contributed to the success of these efforts:

- The involvement and support of the Boston PIC;
- The quality of the employer infrastructure, including mentors and other aspects of student supervision; and
- The quality of student preparation for worksite culture.

The Role of the Boston Private Industry Council

The Boston Private Industry Council is one of the few PICs that sees direct engagement with public education reforms as central to its mission, and it is unique in going beyond the traditional role of convening employers for policy discussions. The PIC actively recruits and supports the involvement of Boston's private-sector employers in school-to-career and workforce development efforts. In fact, with over 50 staff people working on school-to-career, including 38 school-based staff, it is a key generator and communicator of Boston's vision of a school-to-career system. Moreover, it has worked closely with the Boston Public Schools to sharpen and implement that vision, particularly over the past three years.

The PIC performs a critical "connecting" function, primarily regarding the case management of students participating in the leading-edge initiatives. ProTech employers (and academies employers as well, although to a lesser extent) see this case management as essential—the "glue" that maintains their relationship with a school and reduces their costs and concerns. Case managers—called Career Specialists and ProTech Coordinators—help workplace supervisors plan and structure student learning, assist students in negotiating workplace culture, and serve as a resource for both supervisors and teachers in nurturing student progress. The work of Career Specialists and ProTech Coordinators brings them into the schools on a day-to-day basis, making them ready resources for students, teachers, and employers.

The PIC is also a primary player in adult work force development, and its recent designation as the Boston-area Regional Employment Board has formalized its roles in the design and implementation of workforce development policies. Set up by the state, these boards are policy intermediaries that convene stakeholders, set policies, allocate training resources, and (in Boston's case) broker some training for adults.

Dealing regularly with both youth and adult training issues within the same organization has encouraged the PIC to take a comprehensive approach to workforce development. This broader charge, coupled with aggressive fundraising, provides the Boston PIC with state, local, foundation, and private-sector funding to take on case management and other tasks that are unusual for a PIC.

The long-term and visionary leadership of PIC's staff and board has allowed it to keep school-to-career on the employer community's agenda. It also has enabled it to shape key policy decisions made by the Massachusetts legislature and the state's executive agencies. As an example of that leadership, the PIC's school-to-career effort has undergone significant structural change in recent years. It had based staff assignments on geographic areas: Career Specialists and ProTech Coordinators had responsibility for both industry recruitment and student case management at specific schools. In 1996, it shifted staff allocation so that some people with long-term private-sector experience now conduct and coordinate industry recruitment across the system. Specialists and Coordinators remain school-based and manage the post-recruitment employer relationship. They are supervised by the directors of ProTech and the National Academies or other system-wide managers. The PIC recently hired a deputy director to organize overall school-to-career policy and strategy.

These adjustments have improved the PIC's ability to convene partners for administering the program, measuring progress, and improving connections "at the ground level" for students among their worlds of school, work, and community. The PIC has expanded staff capacity to monitor and measure the progress of students as they continue within and beyond a specific school-to-career initiative. This effort stems directly from the STC Partnership Committee's emphasis on proven results, as well as the executive director's strong belief that "what gets measured gets done."

The Importance of Supervisors and Mentors

Both the National Academies and ProTech promote strong student-adult relationship and emphasize the power of engaging adults in the lives of young people. The National Academies use both mentors (typically in the junior year) and supervisors (typically for senior-year work experiences). ProTech does not formally separate these two roles: employees choose to supervise students, while students seek out, in their own ways, adults who can act as mentors, often finding that the supervisors fulfill this function in practice. Employers interviewed for this study stressed the importance of these "shop floor" relationships to both students and employees.

Many National Academies and ProTech employers said that the support structures within their own organizations have been key to the effectiveness of supervisors and mentors. Particularly in larger firms, a staff member, typically a mid- or senior-level human resources employee, helps ensure program quality with at least two critical functions: (1) selecting and preparing worksite staff, and (2) overseeing the quality of student placements and workplace performance on a continuing basis.

Student Readiness to Enter Workplaces

Employers, particularly academies employers, praised the basic skills preparation of students by classroom teachers and PIC staff. The high quality of student preparation for workplace culture and expectations makes it easier for employers to overcome initial concerns and fears of disruption and lost productivity.

To help students get ready for their work placements, school-to-career high schools design and implement ninth-grade and tenth-grade curricula that focus on "Skills for Success." These curricula contain activities that enhance communication, conflict-resolution, computer, and other key skills. Teaching staff at the schools and their PIC colleagues gear these courses to promoting employability skills *and* minimizing the start-up costs and learning curve for new employers. The partners hope that an ancillary benefit of better-prepared stu-

SUPPORT STRUCTURES AT THE LIBERTY MUTUAL GROUP

Each year, Liberty Mutual Group selects ten high school juniors for an innovative school-to-career experience. The students attend weekly on-site orientation and skill-building sessions during the winter, and the company matches them with specific departments in the spring and summer. As seniors, the students continue work in their departments for another full year. Placements occur in six to eight departments.

A senior human resources representative coordinates Liberty Mutual's ProTech activities as well as its other education partnerships. Besides the coordinator and departmental supervisors, at least two other Liberty Mutual staff members have been part of the ProTech support team: the coordinator's supervisor (a vice president who serves on the executive committee for ProTech Financial Services) and her assistant. While intensive orientation for both students and company staff was necessary when Liberty Mutual began its partnership with ProTech, a "committed core" of departments and individuals now knows how the program works and is committed to it.

Liberty Mutual's ProTech coordinator is in near-daily contact with the PIC's ProTech Coordinator at Charlestown High and often goes to the school for other partnership activities. When work-performance issues arise, the workplace supervisor signals the Liberty Mutual coordinator, who informs PIC coordinator at the school, who alerts teachers. School performance issues are relayed to Liberty Mutual's coordinator by the PIC personnel. After years of practice, the partners have a communication tradition that, says Liberty Mutual's school-to-career coordinator, "shows students we are committed to them, at work and at school."

dents will be greater willingness among adults to volunteer to supervise students.

MOVING TOWARD SCALE AND QUALITY

Boston is making impressive strides toward achieving significant scale for quality work-based learning opportunities. The National Academies and ProTech alone provide summer and year-round internships for almost 1,000 juniors and seniors—roughly 15 percent of the total of about 6,500. And the prospects are good for expanding work-based learning slots further, given the high level of satisfaction among current employers, the PIC's established role in recruiting and supporting employers, and the strong performance of key sectors of the local economy. PIC Director Neil Sullivan feels that a realistic long-term goal is to double the numbers of slots for Academies and ProTech.

Boston's school-to-career partners have four strategies for expanding and institutionalizing work-based learning, each of which addresses a key implementation challenge:

- Using project-based learning as a key to accelerate whole school reform;
- Establishing a state funding mechanism for intermediaries based on employer-paid wages;
- Improving the linkages among school-to-career initiatives; and
- Bolstering the PIC's capacity to recruit employers.

Project-Based Learning, Career Pathways, and Whole School Reform

Superintendent Payzant has encouraged the use of school-to-career pedagogy as a basis for reforming middle and high school curricula and assessment to improve academic performance. However, not every BPS student will participate in a long-term, intensive work-based learning experience like an Academies or ProTech internship. Thus, Boston schools are looking to alternative ways of bringing employers, classroom teachers, and students together to improve classroom learning for all students. Courses like the ninth-grade "Skills for Success" reflect the type of curriculum that, delivered to all BPS students, can add meaning and context to any type of work-based learning.

The BPS has put particular emphasis on professional development efforts designed to expand teachers' repertoire to include *project-based* learning. This pedagogical approach uses real-world problems to teach academic subjects and involves employers and other community partners in innovative ways.

One example of project-based learning is a 1996-97 field study East Boston High School students conducted with the East Boston Neighborhood Health Center. The center employed teams of high school seniors as consultants to

THE NETWORK FOR STUDENT SUCCESS

The Network for Student Success, a joint venture of the BPS offices of Instructional Technology, Information Systems, and School-to-Career, implements a *project-based learning strategy* focused on technology in six STC high schools. The network unites high schools, school-to-career worksites, and community-based organizations to align school and work experiences with Boston's rigorous citywide learning standards. Technology plays a primary role, with on-line electronic connections joining schools, community centers, workplaces, the Boston Public Library, and the Boston Computer Museum.

The Network for Student Success provides equipment and infrastructure, as well as training for faculty in project-based learning and assessment techniques related to using high technology. The funds come from the BPS, through a grant from the U.S. Department of Commerce. District and the community partners, including several employers, provide matching funds.

study ways to improve the health of local teenagers. Using time and support from English, anatomy and physiology, and health professions classes, as well as work hours at the center, the students surveyed local youth and conducted research on models of delivering health care. A local nonprofit agency connected students with community professionals who share their expertise. Student projects based on their research culminated in presentations to the health center board.

This model of bringing real-world problems into the academic curriculum does not require a long-term, paid worksite placement. Projects can be designed around a variety of themes, with employers and other community partners in virtually any industry. A flexible model like this, with district support for developing curricula and forging partnerships, creates new possibilities for employer involvement with Boston's public schools.

Stable Funding for the Intermediary Function

Boston's school-to-career employers make a crucial distinction when assessing the value of various possible incentives for bringing them and their peers into partnerships with the schools: between incentives that *help employers pay the wages* of student employees and those that *ease the administrative costs* associated with employing younger employees who need support, orientation, and skill-building above and beyond that for a typical adult trainee. Instead of wage subsidies or tax credits, Boston's employers have placed a higher priority on strengthening the PIC's capacity to facilitate coordination, help them screen students, and provide case management services. No Boston employer receives a direct financial incentive for its efforts with National Academies, ProTech, or summer work experiences.

In health care and travel and tourism, dominated by larger hospitals or hotels, employers tend to feel reticent about involving firms who won't participate without direct incentives. To these employers, the PIC itself represents a substantial financial incentive by absorbing the costs of school-to-career connecting activities. Several Academies employers also pointed to NAF's funding for curriculum development and other services. (On the other hand, many employers in financial services and in smaller firms see wage subsidies or tax credits as a potentially effective way to open the door to a wider pool of their colleagues.)

Even in Boston, however, the stability of the funding base of the school-to-career "infrastructure" remains in question. The PIC is dependent upon categorical program grants from state agencies or foundations. This makes it difficult to weave dozens of programmatic threads into a single, unified effort, fully accountable to students and employers. Some core of long-term, sustainable funding is needed and will become even more critical when the local economy lapses again.

New state legislation, promoted by the PIC, may help address this challenge. The Massachusetts School-to-Work Connecting Activities Act of 1996 mandated one dollar of funding for school-to-career connecting activities provided through a local intermediary for every two dollars private-sector employers pay in student wages for structured work-based learning experiences. The state budget for FY 1996-97 provided about $500,000 in funding; for FY 1997-98, the authorization increased to $2.8 million.

Improving Linkages Among School-to-Career Initiatives

The PIC has begun to take a more consistent approach to all school-to-career initiatives—from ProTech to job shadows, Academies, and summer jobs—to help employers understand how these fit together and plan their participation more holistically. The PIC and BPS hope that shared staff, common student evaluation procedures, and other improved linkages among programs might make employers participating in job-shadow, summer-job, or internship programs more amenable to longer-term, more intensive commit-

ments by minimizing "new languages" to learn or new PIC staff with whom to work.

This attention to linkages among the various school-to-career programs reflects another shift for the PIC, which had focused first on "achieving sheer numbers" of students and worksite placements, according to Executive Director Neil Sullivan. In 1996-97, he says, the PIC began to "ratchet up the quality" to ensure that Boston's effort does not sacrifice quality to quantity.

Sullivan argues that high-quality program management and "customer service" will make employers more willing to provide intensive work experiences for students. He points to high turnover among Summer Jobs Collaborative employers as an indication of the long-term difficulty of engaging large numbers of employers without ensuring program and service quality. Few Jobs Collaborative employers see summer jobs as a school-to-career effort, much less a workforce development strategy. In contrast, employers who also participate in ProTech or the Academies define their bonds to the PIC in terms of the more intensive relationship.

Following from that increased attention to quality, the PIC has begun to ask employers to use a *learning plan* to structure student work experiences during both the school year and the summer. It sees this learning plan as a tool that could better serve employers and students in the leading initiatives while also strengthening commitments to summer jobs among employers that are not part of a year-round effort. In 1996, ProTech created the learning plan by radically revising occupation-specific training plans to focus on broad "competencies"—e.g., communications, problem solving, and interactions with others) that employers, schools, and community members agreed were essential to success in higher education and the world of work.

The PIC has also adapted the learning plan for other alternative education initiatives, such as Diploma Plus, a program for at-risk and out-of-school participants that requires at least 150 hours of paid or unpaid work or community service. Diploma Plus, a project the Center for Youth Development and Education, is being implemented at four community-based-organization sites.

Introducing the learning plan and its competencies—again, in simpler format—to job shadowing experiences could serve both worksite and school personnel. Employers could use the competencies to show students the skills needed for the workplace. Teachers could use them in the classroom as a "checklist" that gives students an analytic framework to reflect upon their brief experiences and compare them to past or future shadows.

Bolstering Employer Recruitment Efforts

As Boston's nine school-to-career high schools expand their programs toward whole school reform around project-based learning and a progression of work-based learning opportunities, the number of participating students will continue to rise—as will the need for expanded employer involvement. To accommodate this expansion, the PIC and BPS will have to expand their marketing and recruitment efforts among the city's employers.

However, at least two factors inhibit that expansion. First, many local employers have but a limited grasp of the PIC's mission or the city's school-to-career strategy. Some participating employers express polite frustration that many of their peers are not involved and are not being pushed publicly to participate. Second, even with Boston's extraordinary level of employer involvement and leadership, many private-sector employers regard involvement in the city's school-to-career efforts as essentially a community service. Will these employers stay involved when the economy changes or when they feel they have, in the words of one senior executive, "done enough for charity?"

To date, these issues have not posed a significant barrier to recruiting sufficient employer partners for Boston's school-to-career initiatives. Boston has employed the "slow build"

model to make an impact, using a catalytic intermediary (the PIC) to refine and intensify their efforts, expand the base steadily but slowly, and accumulate a reservoir of good will and strong institutional relationships. However, to significantly expand initiatives that link school and work will require a new approach—a "rapid evolution" that would entail aggressive public efforts to change the nature of employer recruitment and support. Success will require new types of conversations and commitments within the city's employer base—of the same groundbreaking and comprehensive nature that the Boston Compact itself required.

Three priorities are: (1) intensified recruitment, (2) a more stable employer infrastructure, and (3) a strategy for involving smaller employers.

Intensified recruitment. Many employers would like the PIC to lead a public campaign with clearly articulated goals and a well-communicated "challenge" to their peers to sign up for ProTech and the Academies. At least one employer suggested that this campaign should be at least as vigorous as the effort to secure 3,000 jobs each summer. The effort could take advantage of the broadly defined career clusters and tap new groups of employers. For example, ProTech Health Care is considering outreach to smaller employers, including nursing homes, medical suppliers, and home health care suppliers. The sectoral strategy that has been used to build ProTech and the Academies to date provides good opportunities for encouraging employers to appeal to their peers. Superintendent Payzant's leadership in placing school-to-career squarely within broad education reform provides another opportunity for using the "bully pulpit" to raise public and employer awareness.

A more stable infrastructure. Several leaders of business involvement in Boston's school-to-career initiatives have proposed long-term strategies for increasing awareness among employers and overcoming the PIC's reliance on categorical program funding. Employer and community leaders are considering creating "leadership cadres" for each industry cluster. These would serve as focal points for organizing employers to participate in long-term, integrated learning experiences and for soliciting long-term, private-sector funding for connecting and convening activities. The cadres, analogous to the Academies Advisory Boards or the team that started ProTech Health Care, would focus on recruiting employers in targeted industries and creating more stable financial support.

A small employer strategy. For employer participation to continue to expand, a clear strategy is needed for organizing, recruiting, and supporting smaller employers, who have limited resources and particular workforce needs. Small employers are in the clear majority in ProTech's two newest clusters, environmental services and business services. Small shops, and small branches of larger firms, also make up a significant fraction of the employer base in all three academies programs. Many of these employers have no human resources personnel and find it difficult to adopt a model of internal supports and program management that large firms can afford. Recruiting these employers takes longer because each one can work with only a few students, requiring larger numbers of participating employers. In addition, advisory groups in industry clusters dominated by small firms are unwieldy: deriving consensus from twenty or more engineering firms is more difficult than from ten hospitals, and executives from small firms find it harder to attend meetings.

The PIC is aware of the differing situations of larger and smaller employers and the need for a recruitment and involvement model that can be sustainable for small and mid-sized firms. To date, though, the PIC has not designed a staffing structure to meet this challenge.

KEY LESSONS

This case study has identified lessons about employer involvement that emerge from Boston's school-to-career efforts, including

employers' assessments of costs and benefits, their reasons for participation, and the extent of their involvement. The Boston experience offers several broad lessons in building employer involvement in school-to-career transitions that can be useful for other communities trying to involve their employers in large-scale, high-quality school-to-career efforts.

Coordinated, unified action by private-sector leaders sends the signal to employers that participation in school-to-career efforts is both beneficial and expected of active members of the business community.

Clear signals of support and participation—from key CEOs and from politicians, school administrators, and other community leaders—help allay fears that "we will be left holding the bag if we step forward and invest in this," as one employer put it. Over the long run, involving employers in a coordinated, unified campaign builds the trust and willingness to collaborate that serve as a strong foundation for future efforts.

The Boston Compact began an evolving history of steadily intensifying trust and mutual commitment among partners. This process has been enhanced in recent years by public support for school-to-career strategies voiced by the presidents and CEOs of high-profile employers, including the Federal Reserve Bank of Boston, Partners HealthCare, Pathway Health Network, as well as the mayor, school board, superintendent, and other public officials.

Sustained employer involvement depends on clear goals and reliable measures of progress.

Boston's school and business leaders are committed to measuring progress toward implementing school-to-career in the city—and toward achieving results for young people. This emphasis on goals and measurement promotes accountability. Over time, accountability is the bedrock for trust, credibility, and community consensus. The extensive efforts of the School-to-Career Partnership Committee to define a career pathway clearly, gauge the intensity of pathway programs and activities, and measure students' academic progress and skill achievements in statistically rigorous ways represent a solid accountability strategy *and* a powerful marketing and recruitment strategy.

Quality school-to-career efforts require a stable, credible intermediary agent.

School-to-career efforts demand strong coordination, communication, and linkages among employers, schools, and students. None of these occur automatically. Without the aid of a third-party organization, the costs to employers of participating in these initiatives can outweigh the benefits, particularly for the day-to-day management of school-business relationships. In Boston, the Private Industry Council provides these intermediary services, and it is well-regarded and highly valued by private-sector and public-sector partners. Moreover, it houses multiple education- and workforce-related efforts under one roof, simplifying coordination and lessening frustrating duplication of outreach efforts to employers.

The PIC is particularly effective because it both *convenes* key employer, school, and community leaders and also *implements* the policies and directives of its steering committees. Because its staff are grounded in the actual work, the PIC can quickly translate policy decisions into practice, and then turn around and help policymakers learn from practice. While other cities may not enjoy this kind of well-staffed, multi-faceted intermediary, many have less "mature" coordinating organizations that can grow into the varied roles played by the Boston PIC.

To reach significant numbers of young people with high-quality school-to-career programs requires not only new employer relations with schools but also changes in teaching practice, supported by new curricula, standards, and assessments.

Improving student achievement cannot be accomplished without changes in the classroom. To move beyond the core of juniors and seniors enrolled in ProTech and the Academies, *every* classroom—in high school and earlier—

must engage the community in active learning experiences. Employers and other community partners can support and press for these changes, but those ultimately depend upon the creativity and commitment of teachers and the support that teachers receive from school and district administrators.

As successful as Boston's efforts were in the early 1990s, this level of advocacy did not arise until the appointment of a school-to-career director and a new school superintendent. Their consistent support for schools undertaking school-to-career activities has reduced cynicism among teachers that "this is just another education fad" and bolstered employer confidence that schools—and the district—can follow through on promises.

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INTERVIEWS

Twenty interviews were conducted for this case study. Other data sources included the Boston PIC, the Boston Public Schools Office of Information Services, and *Boston's Economy 1996*, published by the U.S. Department of Labor, Bureau of Labor Statistics. Employer views were also distilled from a Jobs for the Future assessment of ProTech Health Care, which involved 40 interviews, and from JFF's ongoing work with BPS district and school-level personnel.

Interviews conducted for this case study

Susanne Beck, Director of National Academies of Boston, Boston PIC

Myles Calvey, Business Manager and Financial Secretary, International Brotherhood of Electrical Workers, Local 2222

Edward Carle, Mentoring Program Coordinator, International Brotherhood of Electrical Workers, Local 2222

John Cleary, Director of Account Development, American Express Travel Management Services

Anne D'Arcy, Senior Human Resources Representative and Coordinator of Business-Education Partnerships, Liberty Mutual Group

Bill Dunham, Special Employment Manager, Massachusetts Department of Environmental Management

Carola Endicott, Organizational Development Director, New England Medical Center

Karen James-Sykes, Associate Director, Massachusetts Market Area, NYNEX

Samuel John, Financial Reporting Officer, Massachusetts Housing Finance Authority

George Kaye, Vice President and Corporate Director of Learning and Diversity, Partners HealthCare System

Maryclaire Knight, Executive Director, Greater Boston YMCA (Dorchester Branch)

Mark Koehler, Area Controller, Four Seasons Hotel

Joseph Kringdon, Senior Vice President / Investments and Sales Manager, Smith Barney

Rebekah Lashman, REB Policy Coordinator, Boston PIC

Ginger Lawrence, Public Education Coordinator, NESCAUM

William McIntyre, Vice President, Massachusetts, NYNEX

Kathi Mullin, School-to-Career Director, Boston Public Schools

Linda Paresky, President & CEO, Travel Education Center

Carmen Pombiero, Human Resources, Hygienetics Environmental

Linda Quatieri, Training Coordinator, Education Center, John Hancock Mutual Life Insurance Company

Joan Rahavy, Director of Human Resources, Massachusetts Market Area, NYNEX

Maureen Rojas, Director of Human Resources, Cablevision of Boston

Paul Savard, Environmental Engineer, Sverdrup Civil, Inc.

Bill Spring, Vice President for Community Affairs, Federal Reserve Bank of Boston

Neil Sullivan, Executive Director, Boston PIC

Roger Swadish, Regional Vice President, DoubleTree Hotels

Deanna Ubinas, Community Outreach Assistant, Massachusetts Water Resources Authority

Keith Westrich, Director of ProTech, Boston PIC

FORT WORTH: Leading with Applied Learning

Robert W. Glover

Business leaders in Fort Worth, Texas, have worked closely with the schools for over a decade, with the Chamber of Commerce taking the lead in forming links between the district leadership and individuals schools. These efforts have had three goals: 1) producing graduates equipped with the skills and knowledge needed for success in an increasingly technological world, 2) familiarizing students with available careers and opportunities, and 3) educating students so they can apply outside the classroom what they learn in school.

The evolution and focus of Fort Worth's efforts to link schools and employers have differed significantly from collaborations in other communities profiled in this volume. The core elements of the Fort Worth approach include the following:

Collaboration began around curricular goals, rather than offering work experiences for students. Responding to skepticism among employers about the extent to which the schools could improve, business and school leaders began their collaboration cautiously. The Fort Worth Independent School District (FWISD) first asked for information to guide reforms rather than for funds or for opportunities for student work experiences. In response, the business community helped the school district, teachers, and parents understand the changing economy and the kinds of skills employers seek in public school graduates.

Reforms have emphasized applied learning in the classroom and support for teachers as they change instructional practice. Fort Worth is one of the nation's leading school districts in terms of its commitment to using applied learning techniques in the classroom. For most of the past decade, the district has invested in professional development opportunities for teachers to increase their knowledge of and facility with active, experiential pedagogy. Through both summer institutes and involvement with national initiatives that stress project-based and applied learning, Fort Worth has created a core of teachers who are experienced and confident in these methods.

Fort Worth has demonstrated an ability to implement programmatic reforms on a large scale. The FWISD has concentrated on implementing reforms it believes are sustainable for large numbers of students and teachers. In addition to the applied learning effort, a week-long, work-based learning program reaches two-thirds of seventh-graders. The district supports both efforts primarily through its own budget, not outside funding sources.

The district has moved gradually to offer high school students work-based learning experiences. While Fort Worth has emphasized elementary and middle school reforms, the Chamber, employers, and the district have begun developing internships and other work-based opportunities for high school students. These programs are small, but the Chamber of Commerce, the district leadership, and the Career and Technical Education staff are committed to expanding work-based learning. In addition, several reforms, in particular the focus on professional development in applied learning, have helped build a foundation for expanding the role of work experiences in classroom instruction.

Fort Worth has borrowed from and linked with others, making creative use of outside expertise, strategies, and materials. Part of Fort Worth's strength has been its willingness to seek assistance from national experts and become involved in national networks and demonstrations, such as Vital Link and New Standards. This has enabled Fort Worth to benefit from high-quality programs and materials without bearing the full development costs.

School reform is understood to be a long-term, incremental process. Fort Worth has built its reforms step-by-step, with consistent attention to design, implementation, and evaluation. The FWISD leaders and their external allies appear to appreciate the difficulty of changing practice in large school districts, and they have made a corresponding long-term commitment to the task of school reform. Facilitating that commitment has been stable leadership in the school-business-community partnership in the 1990s.

For Fort Worth, the biggest challenges to continued progress in linking schools and work lie in the community's willingness and ability to integrate work experiences into high school programs at a scale that would reach a significant percentage of students. There is growing commitment to this strategy for motivating young people and expanding applied learning into real-world settings, and early experiments in generating work experiences in several industries show promise. But to expand these efforts, many more employers will have to participate, and the Chamber and other employer groups will have to expand their efforts to recruit and support them. Like so many districts around the country, the FWISD must also make a decision about where work-based learning fits in its plans. Is work-based learning part of the upgrading of technical education, or is it part of a strategy for changing the nature of all high school education? The answer will determine the kinds of work experiences that Fort Worth seeks for students and teachers, the relationship of work experiences to the expansion of applied learning across the system, the scale of work-based learning, and the long-term political and public support for these innovations.

BACKGROUND

Demographic and Economic Profile[1]

Fort Worth has almost a half million residents, roughly one-third of the population in the four-county metropolitan area.[2] In 1995, the city's median household income was $26,547, compared to $32,121 in the metropolitan area and $34,076 nationally.

The local economy has adjusted to two major shocks in recent years: the oil industry collapse in the mid-1980s and the downsizing of defense firms in the early 1990s. The 1990-91 recession also hurt the Fort Worth area, although not as badly as it affected many other parts of the United States. Metropolitan area unemployment rose from 5.2 percent in 1990 to 6.8 percent in 1992, below the national peak of 7.5 percent. Directly or indirectly, defense cuts accounted for much of the unemployment. Lockheed Martin alone has permanently laid off over 17,000 people since 1990.

Fort Worth's recovery has been strong. Regional unemployment fell to 3.9 percent in 1996 and 2.9 percent at the end of 1997. City unemployment had risen to 9.4 percent in 1992 but recovered to 5.1 percent for 1996 and 3.9 percent at the end of 1997.

During these economic cycles, the metropolitan area has undergone major structural changes. Most important has been a shift from goods-producing industries into services. In 1980, manufacturing composed 25 percent of the region's non-farm employment. By 1997, that proportion had dwindled to 15 percent. Manufacturing continues to be important—the area is home to over 700 high-tech companies—but services are now the largest sector. In 1997, they accounted for 27 percent of employment and had provided 48 percent of job growth during the 1990s. Within this sector,

health and business services have been the largest sources of growth, accounting for 36,700 new jobs between 1990 and 1997.

The Fort Worth Independent School District

With an enrollment of 75,908 students in 1996-97, the central-city Fort Worth Independent School District is Texas's fourth largest school district, covering most, although not all, of Fort Worth. In the 1995-96 school year, 57 percent of its students were classified as economically disadvantaged and 18 percent were limited English proficient. Of the students in the district, 34 percent were African-American, 36 percent Hispanic, 27 percent Caucasian, and 2.6 percent other. In 1996-97, the district's 4,276 teachers worked in 12 high schools, 21 middle schools, and 69 elementary schools. While Fort Worth does not rank at the top of Texas's school systems, neither does it fall at the bottom. On standardized tests its students score higher on average than those in neighboring Dallas but not as high as those in Houston.

INITIATING EMPLOYER INVOLVEMENT WITH THE SCHOOLS

The efforts of the FWISD to engage employers in school reform resulted from discussions in 1988-89 between Steffen Palko, Vice Chairman and President of Cross-Timbers Oil Company and a newly elected trustee of the school board, and Don Roberts, recently appointed superintendent of the Fort Worth public schools after serving as Arkansas State Commissioner of Education. According to a 1992 review of Fort Worth's business-school links, Roberts "arrived at a time when members of the local business community, recognizing the critical role of the schools in preparing young people for the workplace, were taking a greater interest in public education and actively looking for ways to offer help and support."[3]

With Palko laying out a conceptual framework and Roberts developing a plan to implement it, the result was Project C^3—Community, Corporations, Classrooms. Jointly sponsored by the FWISD and the Chamber of Commerce, Project C^3 has sought to make public education relevant to the needs of the next century. Inaugurated in 1989, 25 businesses joined Project C^3 at that time, and over 250 are signed up today.

Paul Ray, Jr., president of Ray and Berndtson, Consultants and Executive Search, was the first chair of the Project C^3 Task Force, now called the Project C^3 Steering Committee. On the initial task force were representatives of the Fort Worth Chamber of Commerce and the Fort Worth Metropolitan Black Chamber. Among the major firms represented were Tandy, Lone Star Gas, Coopers and Lybrand, IBM, Bell Helicopter-Textron, Southwestern Bell Telephone, General Dynamics, All Saints Health Care, Harris Methodist Health Service, Dallas-Fort Worth Airport, Texas Securities Bankshares, NCNB Texas, and the *Fort Worth Star-Telegram*. Also represented were K-12 schools, Tarrant County Junior College, and Texas Wesleyan University. Community organizations participated as well, with members from the PTA, neighborhood associations, and the United Way.

Today, Project C^3 is directed by a steering committee of four corporate representatives, three community representatives, and three teacher/FWISD representatives. It has two project coordinators, one from the Chamber and one from the school district.

Over the years, Project C^3 has evolved into a set of initiatives with four key goals:

1. Define the skills needed in the workplace;
2. Use workplace skills to assess needs;
3. Link instruction and the workplace by integrating classroom instruction with workplace skills development, providing incentives for students, creating school-business alliances, fostering collaborations between

teachers and company employees, and developing school-to-career transition models; and

4. Establish performance standards by developing a broad array of innovative assessment formats.

The Message to Employers: Help Us Identify Your Skill Needs

In organizing employers to work with the schools, the Chamber of Commerce was a ready partner. In 1989, a Chamber-commissioned study had concluded that the city's single greatest barrier to attracting new businesses was a perception that the quality of the public schools was low.[4]

The Chamber leadership decided to take proactive steps; yet many in the business community, including active Chamber members, were pessimistic that anything could improve Fort Worth's central city schools. Amid this skepticism, Roberts and Palko convened a series of breakfasts with business leaders and committed the school district to improving student skills, knowledge, and achievement. To assist the process, Roberts and Palko asked employers for information rather than money. The key message was: *We are committed to improving the schools. Tell us what you want our graduates to know and be able to do.*

To collect that information systematically, the FWISD engaged a consultant, Arnold Packer, to help develop survey instruments for analyzing local jobs.[5] Packer met with people from the schools and businesses, enabling them to design jointly an approach appropriate to Fort Worth. As a result, the Chamber and the FWISD administered three surveys in 1990:

- The *Job Analysis Survey* identified work tasks. It asked employers to list critical jobs and, for each job, identify the major tasks.
- The *Proficiency Survey* assessed the skills required for these tasks. Workers in critical jobs rated the required proficiencies in seven areas: reading, writing, mathematics, speaking and listening, computer literacy, reasoning and problem solving, and originality and creativity (see box, page 42).
- The *Chief Executive Officer Survey* asked about recruitment, training, and other work force issues affecting the firm. It gathered data on the types and numbers of workers required, as well as anticipated workforce skill needs for the coming three years. This survey went to the CEO or site manager and the director of human resources in each firm.

Just as important for schools as this data, the survey process yielded many examples of workplace tasks illustrating the proficiencies, especially tasks dependent on adept or advanced levels of the skills. The examples collected have since provided teachers with tangible and concrete material to use as models in designing applied learning projects.

Over 300 businesses and other employers completed the survey, and some 3,000 employees rated the skills required for 791 job categories, 4,000 tasks, and 30,000 sub-tasks. The Chamber distributed and collected the surveys, and the FWISD's research and development office administered them, entered and analyzed the data, and published the results (see box below for an example of skills needed by a registered nurse).

SKILL LEVELS FOR A REGISTERED NURSE

Fort Worth's proficiency survey assessed the levels of skills required for critical jobs. For example, a registered nurse would need to be able to read at an adept level, which meant the ability to find, understand, summarize, and explain relatively complicated information and understand cause-and-effect relationships.

In the other skill areas, a registered nurse would need to be adept in writing, speaking and listening, reasoning and problem solving. The job required an intermediate ability in mathematics, computer literacy, originality, and creativity.

The analyses revealed that student achievement would have to improve significantly across the board if young people were to be prepared for jobs in the local economy. The results suggested that students not only needed higher skills in reading, mathematics, and writing but also stronger proficiencies in the other four skill areas: speaking and listening, computer literacy, reasoning and problem solving, and originality and creativity skills.

Fort Worth's strategy for engaging the business community appears to have succeeded. Until the late 1980s, the Fort Worth Chamber had had little involvement with schools beyond such traditional activities as supporting candidates for board elections and participating in "adopt-a-school" campaigns. But the 1989 study had generated concern among the Chamber's leaders, and the surveys laid a strong base for cooperation between schools and employers. When Project C^3 emerged, Chamber members gave it broad support. Moreover, the surveys not only provided an excellent entree to skeptical employers, they also gave the schools a solid rationale for curricular innovations, such as the use of applied learning methods and the teaching of teamwork, communication, and other skills that employers value.

FROM ANALYSIS TO SCHOOL IMPROVEMENT

Project C^3 has been the formal vehicle for linking the FWISD with the Chamber of Commerce and its members. Variously described as an "umbrella," a "vision and process," and "not a program,"[8] Project C^3 ultimately aims to provide educators with guidance and resources

SKILL LEVELS RISING IN FORT WORTH ASSESSMENT

As in 1990, the Chamber and the FWISD collaborated again in 1996 to conduct a round of surveys. Using a representative sample of local firms, the results confirmed and updated the 1990 findings.[6]

The two sets of surveys give an overall perspective on the proficiencies required for specific local jobs and a sense of how skill demands have changed. For example, rudimentary reading skills qualified applicants for 2 percent of jobs held by respondents in 1996, down from 6 percent in 1990.[7] Although the specific definitions vary by academic area, in general, *basic* refers to simple skills for doing mundane tasks, while *intermediate* and *adept* refer to more complex skills and creative mastery of them.

Overall Job Ratings by Areas and Levels of Proficiency Percentage, 1990 (n=791) and 1996 (n=215)

	Rudimentary 1990/1996	Basic 1990/1996	Intermediate 1990/1996	Adept 1990/1996	Advanced 1990/1996
Reading	6/2	29/21	34/32	25/37	5/8
Math	15/12	42/38	30/33	9/13	2/4
Writing	11/7	32/23	34/34	19/31	3/5
Speaking and Listening	4/4	23/16	41/34	25/34	7/14
Computer Literacy	24/15	29/28	29/33	7/16	2/8
Reasoning and Problem Solving	7/3	25/15	38/36	24/31	6/15
Originality and Creativity	12/9	44/33	25/28	15/19	3/11

for producing high school graduates with the skills needed to succeed in careers. The job surveys have accomplished three objectives serving that goal:

1. They operationally define success in the workplace.

2. They establish performance standards that define what students need to know and improve the ability to measure student learning.

3. They help link instruction to real-world applications.

In addition, for both teachers and young people, Fort Worth has emphasized experience in the real world of work through internships and work-based learning. It has started in this direction slowly, with a priority first on changing teaching and learning within the classroom. But it is moving steadily toward making work-based learning part of the education of large numbers of students and increasingly central to plans to restructure schools.

Fort Worth addressed the first Project C^3 objective, defining success in the workplace, largely through the job analysis survey. The district facilitated the establishment of performance standards by collecting samples of work tasks. It also launched several initiatives that provide teachers and students with opportunities to spend time in workplaces and gain firsthand experience of the skills employers require. The most important of these initiatives is Vital Link, a component of Project C^3 that brings students into workplaces for short-term internships. Vital Link also offers one-week internships for teachers. In addition, students gain other workplace learning opportunities from business partnerships and connections that many individual teachers have established through applied learning projects.

Toward the third Project C^3 objective, helping teachers connect instruction with real-world applications and changing curricula and pedagogy, the FWISD established the Summer Academy on Applied Learning. Academy training qualifies its graduates to teach in the district's experimental applied learning schools.

Several other efforts have further linked schools and employers. For example, the FWISD participates in the New Standards Project, a national effort to transform how schools assess student learning. At the same time, the district has embarked on significant changes in vocational education as well as poverty-area projects funded under the federal School to Work Opportunities Act.

These varied and creative efforts, all of which seek to link employers and schools both to improve academic achievement and career opportunities, are described in more detail in the box on page 44.

Applied Learning: The Heart of Fort Worth's Reforms

From the start, Project C^3 has made applied learning central to school reform, specifically to help translate workplace findings into changes in curriculum and pedagogy. Applied learning is an instructional method that makes the connections between in-school learning and out-of-school experiences clear for students. Teachers collaborate with employers and other community allies to develop project-driven, real-world learning and problem-solving experiences for students. Applied learning involves students in decisions about how best to learn what is to be learned, making them more responsible for their own education.

In 1991, the FWISD established the Summer Academy on Applied Learning, beginning with a four-week session for 17 volunteer teachers. The district has offered the academy each summer since then, gradually refining the training. The full program is now organized into two-week segments; teachers take one segment each summer for three years. Readings about applied learning, from John Dewey's work to the SCANS report, give teachers a basic understanding of, and rationale for, applied learning, project-based instruction, and problem-based learning. However, teachers spend most of their time in learning-by-doing activities, cre-

THE HIGH PERFORMANCE SCHOOLS PROJECT

In 1991, Project C[3] received a grant from J.C.Penney's High Performance Schools Project, which is aimed at refining and implementing school-based management practices as models for replication. The National Alliance of Business, in cooperation with the district, administered the grant and documented and disseminated its results. As part of Fort Worth's efforts under Project C[3] to involve business in improving the schools, J.C.Penney and the Chamber designed the project to help strengthen the district capacity for school-based management using business experience and know-how.

The High Performance Schools Project has assisted several FWISD schools with leadership institutes, training, and grants to support the implementation of school-based management. "Site-based decision-making teams work with the school principal and faculty to develop a climate of collaboration designed to raise student achievement," according to a 1997 J.C.Penney report.[9] "Team members offer input on school goal setting, organization, curriculum, budget, staffing patterns, and professional development." The project monitors, assesses, and adjusts these teams "to ensure that students continue to benefit from team members' participation."

ating authentic projects that address specific educational goals. Academy participants also devise criteria for assessing student projects.

Teachers who complete the three segments, plus an internship or work experience in an applied learning center or school, earn certification in applied learning. They receive no extra pay for this credential, which is unique to Fort Worth, but it qualifies them to teach in district experimental schools, where they are in demand, and it also improves their chances for promotion. These schools are the Alice Carlson Applied Learning Center, an elementary school established in September 1992; the Riverside Applied Learning Center, established in 1995; the Natha Howell Elementary School; the Bluebonnet Applied Learning Academy, a middle school established in 1994; and the Applied Learning Academy, established in 1995 as a "school within a school" at Trimble Technical High School.

All the applied learning schools benefit from employer involvement. Most important, teachers at these schools (and at other FWISD schools) have established many connections with employers through applied learning projects, and many employers host learning activities at the worksite. The FWISD's applied learning staff have assembled the resulting project plans into a two-volume collection that is a valued professional development resource.[10] The plans provide teachers with examples of good projects and also illustrate less successful practices or adequate practices that can be refined and strengthened. That mix relates to one reason the training in applied learning spans three summers: to become proficient at project-based instruction, teachers usually need three years to test and re-design projects.

By training a growing number of teachers in applied learning, the FWISD has developed a cadre of educators knowledgeable and skilled in this approach to instruction. By 1996, more than 500 teachers had completed at least one session at the summer academy; a survey showed 224 of them actively using applied learning. Although these teachers comprised only 5 percent of the district total, together they taught at least one class to an estimated 17,725 students on 66 campuses—nearly a quarter of the district's students in two-thirds of its schools.

Instructional practices in the schools have been revised significantly over time, especially at the elementary level with some re-thinking about how to introduce applied learning in classrooms. Initially, Alice Carlson School provided all instruction through project-based learning. However, in some situations not all

students learned all the required elements in Texas's state-mandated curriculum. For example, in team-based projects, not everyone worked on all tasks, so every student did not effectively learn all the essential elements in the state curriculum. As a result, for efficiency reasons, Alice Carlson School has incorporated lectures and other traditional instructional practices. William Calder of the district's Office of Applied Learning and Standards characterizes the mix as "about 60 percent project-based learning and about 40 percent conventional instructional approaches."

The FWISD makes it a priority to evaluate its initiatives, including applied learning, through both internal and external assessments. Students at both Alice Carlson and Bluebonnet have performed well on the Texas Assessment of Academic Skills (TAAS).[11] Alice Carlson students, tested in grades three through five on reading, writing, and math, have done significantly better than the district average on almost all TAAS tests almost every year since 1992. Bluebonnet students in grades six through eight, tested in reading and math since 1994, have shown similar results.[12]

The New Standards Project: Assessing Competencies for the Real World

The FWISD's capacity and expertise in applied learning has gained national recognition through its affiliation with the New Standards Project. Fort Worth is part of a consortium of six school districts and 17 states sponsoring New Standards, which aims to transform the way schools assess student progress and achievement. The consortium is administered by the National Center on Education and the Economy in Washington, D.C., and the Learning Research and Development Center at the University of Pittsburgh.

New Standards has created a set of learning standards with benchmarks reflecting international criteria, and it has begun developing an assessment system based on those standards.[13] The system has three components:

- *Performance standards* derive from national content standards developed by professional organizations, e.g., the National Council of Teachers of Mathematics. The standards consist of performance descriptions—what students should know and how they should demonstrate knowledge and skills—and student work samples and commentaries that illustrate standard-setting performances.
- *The on-demand examination* provides a reference point for the standards, with a portfolio system complementing the exam to provide evidence accumulated over time and derived from extended pieces of work.
- *Work samples and commentaries* give concrete meaning to the performance descriptions and illustrate the level of performance expected by the standards.

Because of the FWISD's expertise in implementing applied learning, some of its personnel were pulled into New Standards when the project decided to include applied learning as an area of competency. The project and the district now jointly employ several staff, and the district staff member who started the Summer Academy on Applied Learning now works for New Standards full time.

In 1997, the New Standards Project issued national standards in English language arts, mathematics, science, and applied learning for elementary, middle, and high schools.[14] FWISD staff and teachers played major roles in developing and testing the performance standards in applied learning. The five performance standards in applied learning are mastery of the "soft skills" of problem solving, communication tools and techniques, information tools and techniques, learning and self-management tools and techniques, and tools and techniques for working with others.

In the 1996-97 school year, the FWISD began piloting the standards in 12 schools, which have become demonstration sites for implementing New Standards instructional and assessment practices. The schools benefit from

NEW STANDARDS: A WORK SAMPLE IN APPLIED LEARNING

Several projects and student work samples published by the New Standards Project have emerged from Fort Worth. In one example, chemistry students had to find the most effective, economical, and environmentally safe grass fertilizer for the school district.

As described in the New Standards, "The students were given seven weeks to complete the project. They were responsible for all arrangements, such as making contacts with outside resources and obtaining permissions needed to complete the plan. Class time was used to visit other campuses for soil collection, and time outside the school day was also used to complete various parts of the project. The students divided into groups with responsibility for specific components of the project plan. The Director of the Grounds and Maintenance Department for the school district worked closely with the class during the project both as an advisor and as a client who would benefit from the project. The teacher facilitated the project and assisted the students as a resource person. Much of the work was completed as practical science work."

better access to technical assistance, new materials (such as the standards), and new opportunities (and obligations) for professional development.

Vital Link: Internships for Students and Teachers

In 1990, the Education Task Force of the American Business Conference, composed of mid-sized businesses, launched Vital Link, a national effort to foster systematic communication among businesses, schools, and students. Because of Fort Worth's evolving school-business collaborations, it became one of three pilot cities. Vital Link programming, in the form of structured, hands-on summer internships for students and teachers, began the next year as a component of Project C[3].

Through Vital Link, the FWISD and the Chamber have sought to:

- Motivate students to achieve in school;
- Help students understand the connection between what they learn in school and what they need to succeed in further learning, the workplace, and community life; and
- Enable teachers to learn workplace skills that help them prepare their students.

Vital Link is not a career exploration program; students rarely choose which companies they visit. Rather, it is designed to encourage young people to stay in school through firsthand experience that success in the classroom leads to success in the workplace. It also seeks to encourage students to take more math, science, and other challenging courses in high school.[15]

The FWISD Office of School and Community Partnerships coordinates Vital Link, placing incoming seventh graders at job sites to work alongside employees and talk with employers and workers about the academic skills that jobs require. Students apply for these unpaid internships, and all are accepted. The placements run for one week, four hours per day. To facilitate the program's management, internships take place in a one-week block each month during the school year, and summer internships are blocked into six one-week sessions.

Prior to visiting a work site, teachers talk with students about what to expect, what to wear, good questions to ask, and how to behave. To begin the visit, a teacher or a work-site liaison gives a brief orientation to the firm or organization. Each student then works alongside mentors for the rest of the internship. Because Vital Link emphasizes participation and aims to provide more than passive, job-shadow experiences, workplace sponsors are encouraged to place students with adults on a one-on-one basis that maximizes the potential for interaction and mentoring.

At the end of each morning, students write in log books. They record what the company

VITAL LINK INTERNSHIPS

Vital Link engages students in short-term, but academically rigorous, workplace activities. At Alliance Airport students learned how to read weather instruments and use them to predict the weather, participated in a fire training course, and learned how to inspect airplanes and the airport for safety violations. Interns at Alan Young Buick GMC Truck learned how to create a budget and manage expenses, obtained credit reports and instructions on financing a car, and helped unload and sort new car parts.

Other high-quality internships have included:

- Barnes & Noble: students set up displays of children's books
- Kaiser Permanente: students separated blood using a centrifuge
- Lockheed Martin: students calculated rounds of ammunition needed for a specific time period
- Spaghetti Warehouse: students learned how to predict customer turnout
- TU Electric: students learned to read an electrical meter and calculate a bill
- University of North Texas Medical School: students assisted medical students in classroom labs
- Vandervoorts Dairy: students tested milk in the lab for freshness and added necessary vitamins
- Winn-Dixie Texas Division Office: students used computer software to produce their own (non-negotiable) payroll checks

does, who they worked with, and that person's job responsibilities. They also address topics that encourage reflection, such as the kind of education or experience the job requires and how the employee's skills connect to classroom learning. At week's end, students usually make a presentation to parents and mentors and receive certificates at a ceremony.

The FWISD pays the expenses for Vital Link's connecting activities as part of its regular budget. The Office of School and Community Partnerships recruits employers and assists their efforts to devise meaningful internships and train mentors. That office also matches employers with schools, handles transportation and other logistics, and generally manages the program. The school district provides student transportation and pays supervising teachers $500 per session during the summer.

Vital Link began in the summer of 1991 with 40 students, 20 teachers, and 4 hospitals. It has grown dramatically since then, expanding to the regular school year in 1993 with programs at schools serving Hispanic, disadvantaged youths who had not been participating in the summer program. In 1996, over 3,000 incoming seventh graders—nearly two-thirds of the seventh-grade class—had internships at 336 employers. Most participating employers including all of the original hospitals have remained consistent Vital Link partners, and many offer several sessions each year. Recruiting employers has become easier as the program has become better known.

Student enrollment declined in 1996 and 1997 for the first time (see chart, page 48) when new year-round schedules made it more difficult to use summer weeks for the program. However, FWISD staff still aspire to expand the program to reach all rising seventh graders.

Teacher Internships: A separate Vital Link component places teachers at workplaces for one-week internships. This internship is a requirement of the Summer Academy on Applied Learning, and it also makes a teacher eligible to be a Vital Link supervisor. The school district offers a $150 stipend to participating teachers. Chamber of Commerce staff help the district recruit employers and pair them with teacher interns, using information from the job analysis survey to make good matches.

Some teachers come to their internship with a particular objective. For example, they might want to see how the workplace uses the math they teach or to collect workplace writing

PARTICIPATION IN VITAL LINK[16]

	Students	Teachers, Interns, and Supervisors	Businesses
Summer 1991	40	20	4
Summer 1992	914	225	89
Spring 1993	817		
Summer 1993	1,143	248	141
School Year 1994	1,394		
Summer 1994	1,835	267	256
School Year 1995	2,024		
Summer 1995	1,647	232	351
School Year 1996	2,262		
Summer 1996	967	316	336
School Year 1997	1,411		
Summer 1997	1,098	212	303

samples. After teachers establish ties with businesses, they often maintain them and invite their business contacts to participate in classroom learning activities.

NexLink: Fort Worth has initiated a follow-up for students who have participated in Vital Link's middle school program. NexLink provides sophomores with two-to-three week summer jobs. Students generally receive the minimum wage, although, because most are 14 or 15 years old, they would have a difficult time obtaining jobs in conventional youth labor markets. A foundation associated with the Chamber of Commerce hires and pays NexLink students. Employers participate by hosting students sometimes and paying the cost of their wages, or contributing to the foundation so other businesses can host students. The FWISD's School and Community Partnerships staff administer NexLink in collaboration with the Chamber.[17]

The district expects NexLink to grow slowly. In a 1996 pilot, 15 high school students participated. The program grew to 25 internships in 1997, but applicants outnumbered the positions available. For 1998, FWISD aims to offer NexLink summer internships to 50 students.

Why employers participate: Fort Worth employers have engaged in Vital Link (and other partnerships with schools) based on a number of factors. Some firms are motivated by the appeal of good community relations and favorable publicity or the desire to be "good corporate citizens." Sometimes, the motivation is personal; business people have families, and many see their children having difficulty in school and in making the transition to work. Employee interest in mentoring can also be a powerful force to engage employers in school-to-career activities.

Centex Construction Co., a large Dallas based construction contractor, contacted Vital Link after it was featured on television. "We wanted to give back to the community," says the firm's assistant comptroller, who coordinates the program at Centex. "These children are our future. We want them to learn as much as they can and stay in school. . . . We want to open their eyes to see all the types of opportunities available to them."

Most commonly, employers respond to a mixture of motives. Lockheed Martin's community relations manager describes his company's interests in linking with schools as a confluence of factors: "I try to find areas where our civic interests and our business interests coincide. Participating in Vital Link is one of those. If we don't have a pipeline of qualified young people coming out of schools, we are going to be out of luck."

Youth Fair Chance and School-to-Work Grants: Work-Based Learning for Disadvantaged Youth

In 1994, the FWISD and the Fort Worth Private Industry Council collaborated to secure a Youth Fair Chance grant from the U.S. Department of Labor. Three-quarters of the grant was to serve out-of-school youth, one-quarter was for serving students at Dunbar

Middle School and Dunbar High School, which are located in a high poverty neighborhood. To continue the Dunbar programming, the school district later secured a federal Urban/Rural School-to-Work Opportunities grant, having used Youth Fair Chance as a springboard to connect that neighborhood's schools, businesses, and community. The district secured another federal school-to-work grant to serve students in the North Area Partnership, a low-income area that includes Northside and Diamond Hill-Jarvis high schools and the middle and elementary schools that feed them.[18]

Since 1994, the Youth Fair Chance/School-to-Work collaboration of community/business partners with faculty and staff at the Dunbar middle and high schools has aimed to form partnerships "to prepare *all* students to succeed in postsecondary institutions, to succeed in the world of work, and to participate fully in society."[19] The partners are committed to developing strategies that lead to fundamental, systematic changes at the two schools. They have sought to improve academic achievement and attendance, reduce the drop-out rate, link instruction to real workplace applications, and integrate vocational and academic learning to reach all students.

Students prepare career-interest inventories in the ninth grade, and based on these, the program arranges three-day internships. These are similar to Vital Link internships but are focused more on exploring career possibilities. In addition, mentors from business, higher education, and public agencies provide students with one-on-one relationships with adult role models. Through the mentoring program, professionals offer students on-going encouragement to pursue educational and career goals.

A community-based Curriculum Committee, with significant business input, develops curriculum supplements and offers teachers ways to incorporate school-to-career objectives and goals in classroom instruction. An FWISD school-to-work coordinator is a liaison for establishing partnerships among the schools, an advisory committee, and business.[20] A school-to-work specialist coordinates the mentor programs, professional development, and the integration of academic and vocational education. Other district staff include an occupational information specialist, social workers, and four parent liaison/teacher assistants.

A New Vision for Career and Technical Education

In 1996, Fort Worth launched an ambitious plan to reform Career and Technology education to better prepare students for both postsecondary education and high-skill, high-wage employment. The components include higher standards, real-world experiences and applied learning, the integration of academic and career education, partnerships with employers, and a reorganization of the curriculum into career clusters.[21]

Like Vital Link, this reorganization is explicitly industry-driven. It also makes career pathways a guiding principle and includes other elements of the school-to-career approach to linking schools and workplaces, as articulated in the 1994 federal School to Work Opportunities Act. The plan stresses industry-defined and recognized proficiencies in foundation skills, generic workplace skills, and industry-specific skills. Also, the plan's first strategy is to "form partnerships with business/industry and professions for each program."

While the plan did not specify a system-wide reform for all students, the district began developing career pathways that include college-bound students. The pathways are in six broad career clusters: arts and communication, business, engineering and technology, health sciences, human services, and natural resources. In addition, although Trimble Technical High is the district-wide school for Career and Technology education, all secondary schools offer Career and Technology courses.

In 1998, Fort Worth began implementing a new plan that moves these reforms further toward systemwide change. Devised by a committee with broad representation, the plan divides the six career clusters into specific concentra-

PROPOSED CAREER CLUSTERS AND PATHWAYS[23]

Arts and Communication: liberal arts, visual arts (design technology, fine arts), musical arts, communication

Business: marketing, office administration, finance, computer science

Health and Medicine: health science technology, science and mathematics

Engineering and Technology: construction technology, transportation technology, electronics, computer technology, manufacturing technology, mathematics and science

Human Services and Education: education and child development, personal and protective services, hospitality and tourism

Natural Resources: waste management, horticulture, mathematics and science

tions and pathways (see box above). It encourages all students to select a career focus in high school, and it explicitly combines preparation for careers and postsecondary education. For each career cluster, the plan specifies the courses needed to meet Texas's minimum requirements for graduation from high school, as well as the requirements for the states "Recommended Graduation Plan" and "Distinguished Achievement Graduation Plan." Texas considers only the latter two appropriate for college preparatory programs.[22]

District staff have detailed how high school students can combine career and college preparation in each of the six career clusters. About 80 percent of the courses are the same across the clusters, accommodating students who decide to change clusters. In addition, "To ensure that students are prepared to continue learning and to enter the workforce after high school or college, they will be encouraged to pursue the Recommended or Distinguished Diploma Program."[24] The district intends career pathways to serve as decision-making tools for *all* students.[25]

Finally, the 1998 plan is explicit about work-based learning: "Students will have the opportunity to have work-based learning experiences in their chosen career pathway. Partnerships will be formed or expanded to insure that sufficient learning sites are available in a range of occupations for all pathways. Students will have adult mentors who represent the specific career area of the individual student's plan."

In beginning to implement career pathways, the FWISD has partnered with the Construction Education Foundation of North Texas, a nonprofit organization that seeks to establish and improve programs that benefit the construction industry. In 1997, about 100 seniors from three high schools spent time learning on job sites. Partly at the industry's insistence, the effort does not just aim to produce craft workers. Each year, the foundation makes up to $500,000 available in scholarships to help finance the college education of students who aspire to work in the construction industry as managers or design and engineering professionals.

Programs have been established in other industries as well. An automobile service program is a partnership with the American Automobile Association. The hospitality and tourism program is a partnership with the Worthington Hotel, American Airlines, and others. The health care program partners schools with Tarrant County Hospital District and other hospitals.

While Project C^3 was not explicitly involved in the Career and Technology reforms, "We don't do anything without getting input from business," says Dr. Bettie Herring, the district's director of career and science education. Of the 21 members on the FWISD's Advisory Council for Vocational and Technical Education, 10 are from business and another represents the Chamber of Commerce. Many council members have long been active with the district and its initiatives, including Norman Robbins of Lockheed Martin, Chuck Watson of the American Airlines Travel Academy, and Steffen Palko.

It should come as no surprise that the direction of Career and Technology reforms mirrors that of Project C³.

MAIN THEMES AND CHARACTERISTICS OF THE FORT WORTH APPROACH

Starting from the 1990 job analyses, Fort Worth has put together, says one observer, "more separate pieces of a thoroughly restructured school system than has perhaps any other system in the country."[26] Business involvement in these efforts has been significant and steady.

Fort Worth's approach can be characterized as follows:

- Collaboration began around curricular goals, rather than offering work experiences for students.
- Reforms have emphasized applied learning in the classroom and support for teachers as they change instructional practice.
- Fort Worth has demonstrated an ability to implement programmatic reforms on a large scale.
- The district has moved gradually to offer high school students work-based learning experiences.
- Fort Worth has borrowed from and linked with others, making creative use of outside expertise, strategies, and materials.
- School reform is understood to be a long-term, incremental process.

Collaboration began around curricular goals, rather than offering work experiences for students.

Fort Worth has rooted its reforms in close collaborations between the schools and employers, specifically the Project C³ partnership of the FWISD and the Chamber of Commerce. In the late 1980s, leaders from business and the schools began discussing how to engage a skeptical business community with the challenge of school reform. The district first asked employers for information, not funds or student internship opportunities. To guide and motivate educational improvement, the district asked the local business community to specify what it wanted of graduates. The FWISD's industry surveys have helped the school district, teachers, and parents understand the changing economy and the kinds of skills employers seek for different jobs and careers. As a result, the schools have solid empirical evidence upon which to base their academic reform efforts and innovations like Vital Link, the Summer Academy on Applied Learning, and New Standards.

For these efforts, employer intermediaries, especially the Fort Worth Chamber of Commerce, have played significant convening and connecting roles. The Chamber has also provided employers with guidelines, checklists, and other materials that facilitate participation with the schools and help make that effective. While the Chamber has been the primary intermediary, national employer groups have played a role as well, including the National Alliance of Business and the American Business Conference.

Key to the Chamber's desire to partner with public schools was an influential study tying economic development to the nature of local workforce. As the economy has improved and the pool of qualified workers contracted, even greater attention has centered on the quality of the labor supply. Reflecting this concern, in 1997 the Chamber renamed its Education Committee the "Quality Workforce Development Committee" and charged it with a refined purpose: "To expand and activate the support and interests of business within the existing public and private educational systems relating education to employment to assure a quality work force is available in Fort Worth. A strong educational system in Fort Worth assures its economic survival and excellent quality of life."[27]

Reforms have emphasized applied learning in the classroom and support for teachers as they change instructional practice.

Fort Worth has put in place several elements of a firm foundation for expanding and strengthening the links between school and work. Most important has been Fort Worth's priority on professional development, founded on the belief that changing instructional processes across the system is critical for improving academic achievement. Fort Worth is one of the nation's leading school districts in terms of its commitment to using applied learning techniques in the classroom. For most of the past decade, the FWISD has invested in professional development opportunities to increase teachers' knowledge of and facility with active, experiential pedagogy. Through both summer institutes and involvement with national initiatives that stress project-based and applied learning, Fort Worth has created a sizable core of teachers who are experienced and confident in these methods.

Fort Worth has demonstrated an ability to implement programmatic reforms on a large scale.

Fort Worth has achieved an impressive level of scale in promoting contextual learning on several fronts. The district has emphasized training a large number of teachers in applied learning, so that a critical mass of teachers, skilled and experienced in these methods, will exist. Similarly, Fort Worth has introduced Vital Link on a large scale, with nearly two-thirds of seventh graders visiting employers for one-week experiences.

Moreover, the FWISD applies its own funds to support these initiatives. Initially, grants and other outside funds paid Vital Link's teacher supervisors. The program now has a budget line from the school district, which even pays the salary of a Chamber staff member to work on education issues.

The district has moved gradually to offer high school students work-based learning experiences.

Fort Worth has focused primarily on elementary and middle school, rather than high school, reforms. In recent years, however, the Chamber of Commerce, employers, and the district have begun developing internships and other work-based opportunities for high school students. These programs are small, but the Chamber, the district leadership, and the Career and Technical Education staff are committed to their expansion. Several of the district's reforms, in particular the focus on professional development in applied learning, have built a strong foundation for such expansion.

Fort Worth has made a commitment to reorganize high schools according to a system of career clusters and pathways. To do so, it will need to arrange additional and more intensive opportunities for work-based learning for high school students. At present, worksite learning opportunities are essentially limited to Vital Link and certain applied learning projects. Fort Worth must overcome several obstacles to incorporate high-quality work-based learning experiences into the education of significant numbers of high school students and reach the scale of Vital Link. For example, in construction and automobile service—industries with which the school district has worked closely for several years—labor regulations restrict some options for worksite learning for students under 18 years old. Fortunately, says Judy Wall, program director of the FWISD Graduate Placement Center, "Child labor regulation is less restrictive than we originally thought....We just need to work through the details and the problems with each industry."

Another concern may be the reaction of adult workers. For example, Lockheed Martin, the city's second largest employer with 11,000 employees, does not generally offer work-based learning to high school students and has no plans to do so. As the manager of community relations explains, "Lockheed Martin is downsizing, and it is not easy to bring in youths even on a temporary basis when adults are going out permanently."

Fort Worth has plans to expand and extend work-based learning, according to Wall.[28] Fort Worth's vision includes active career exploration, including job shadowing, mentorships, informational worksite interviews, and intern-

ships especially at the high school level. While fewer than 200 students took part in relatively intensive worksite experiences in the 1997-98 school year, these numbers are up from a handful a few years earlier. Moreover, Career and Technology staff are upgrading cooperative education placements and aligning them with career pathways.

Fort Worth has borrowed from and linked with others, making creative use of outside expertise, strategies, and materials.

Fort Worth has made excellent use of outside expertise, strategies, and materials. An early example is Arnold Packer's consultancy for the job analyses. Similarly, Fort Worth has learned a great deal from participating in national endeavors, such as the SCANS Commission (on which Palko served), Vital Link, and the New Standards Project. Part of Fort Worth's strength has been its willingness to become involved in piloting national demonstration efforts, enabling it to benefit from high-quality materials and program designs, without having to bear anywhere near the full development costs.

School reform is understood to be a long-term, incremental process.

Fort Worth has introduced its reforms step-by-step, with attention to design, implementation, and evaluation. FWISD leaders and their external allies and partners appear to appreciate the difficulty of changing practice in large school districts and they have made a corresponding long-term commitment to the task of school reform.

Facilitating that long-term commitment has been stable leadership in the school-business-community partnership during the past decade. Many individuals have undertaken, with patience and persistence, a lot of hard work to see reforms through to completion. Despite some turnover, key leaders have remained active, especially Steffen Palko, who was instrumental in starting Project C^3, and Donna Parker, the executive vice president of the Chamber and its coordinator for Project C^3. Indeed, Palko is a common element among many of the reforms linking schools and employers. In addition to serving as the chair of the Fort Worth Workforce Development Board, he is a member of the Advisory Council for Vocational and Adult Education and served on the school board until 1996.

Similarly, Don Roberts was superintendent from 1988 until retiring in 1995. His replacement, Thomas Tocco, has continued the district's efforts to improve students achievement and address employer needs. As the school district's 1996 five-year strategic plan proclaims: "We will . . . increase parent, business, and community partnerships which focus on student achievement, improve attendance and teach life skills."[29]

THE CHALLENGE AHEAD

The FWISD has steadily pursued a coherent vision and set of education reform priorities. The district wants to equip graduates with the skills and knowledge they need to succeed in an increasingly technological world. It wants to familiarize students with careers and opportunities. And it wants graduates to be able to apply what they know in whatever career they choose. To achieve this vision, the district has taken a pragmatic and flexible approach, using available resources, learning from and sharing with others.

The biggest challenges to continued progress in linking school and work lie in the community's willingness and capacity to integrate work experiences into academically rigorous programs at a scale that can reach a significant proportion of high school students. There is growing commitment to this strategy for motivating young people and expanding applied learning into real-world settings, and the early experiments in generating work experiences in construction, automobile service, and other industries show promise. However, to expand these efforts, many individual employers will have to participate, and the Cham-

ber will have to expand its efforts to recruit and support them.

In addition, like other school districts around the country, Fort Worth will have to decide whether it will use work-based learning opportunities primarily within career and technology education programs or as a component of the overall approach to comprehensive high school reform. Certain efforts to link school and work in the district have been focused on district wide reform, tied to academic achievement as much as to improved career choice. The most prominent examples are the Project C^3 collaboration between the FWISD and the Chamber of Commerce and initiatives to change classroom instruction through the introduction of applied learning. At the same time, expansion of work-based learning opportunities—and their integration into career pathway programs that prepare students for either postsecondary education or employment—appears to be the responsibility of the career and technology division of the district.

That vocational programs are seeing themselves as an equally sound route to further postsecondary education is an important development, one that promises to reduce the distinctions between vocational and academic learning. However, in many cities that have moved to expand school-to-career initiatives, situating such efforts within the vocational education part of a district's administrative structure has relegated reform to second-class status, with less influence on the perceptions and behaviors of parents, students, and other instructional staff than if managed by the mainstream curriculum and instructional office. For Fort Worth, as for other school districts, the ultimate resolution of the links between academic and vocational-technical education reform is still being worked out. That resolution may have significant impact on employer choices about how they interact with the district and its reform efforts.

INTERVIEWS

Cami Alexander, Director, Community Relations, J.C. Penney Co.

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UISVILLE: Building from Vocational ıcation Reform

Judith Combes Taylor

Over the past two decades, employers in Louisville and Jefferson County, Kentucky, have shown a remarkable commitment to improving the performance of local schools. At the state level, they have actively promoted standards-based reform through the ambitious Kentucky Education Reform Act (KERA), enacted in 1990. In their own community, Jefferson County business leaders have played a central role in partnerships to upgrade vocational education, provide at-risk students with supports that help them stay in school and learn, and offer work-based learning experiences in their own firms and in innovative school-based enterprises.

The Louisville/Jefferson County experience linking employers with the public schools highlights the importance of several strategies:

Long-Term Working Relationships: Relationships among Louisville's business, school, and political leaders have been personal, deep, and directed toward improving the quality of education and the work force. During the 1980s and 1990s, the community has benefited greatly from a rare stability in leadership that included the mayor, the school superintendent, and the city's most prominent business leader. This stability—and the common vision that accompanied it—has enabled the business community to come together around several significant education reforms, without preventing new leaders and initiatives from emerging.

Education Reform as Economic Development: The leadership of Louisville's business community understands that the region's long-term economic well-being depends upon its ability to continually upgrade and improve the quality of its K-12 and postsecondary education systems. For a community that still attracts significant manufacturing, transportation, and other blue-collar industries, the quality of the local work force is critically important. For this reason, Louisville's employer and economic development organizations have consistently identified education reform generally—and school-to-career initiatives specifically—as a key component of long-term economic development strategy.

Employer Intermediaries: Louisville's business community has an impressive tradition of involvement in, and leadership of, the governance and planning of regional education and work force initiatives. However, it has been slower to recognize the importance of a staffed, stable institution that can be the operational link between schools and employers who seek to provide work experiences for students. The school district has kept the staffing of its school-to-work office lean, and local planning bodies lack the capacity to take on operational responsibilities. This may be changing, however. The state school-to-work system created a regional labor market organization that has taken on certain convening and coordinating roles,

and the new Workforce Development Council's School-to-Work Committee is debating how best to support local efforts.

High Standards in Academic and Vocational/Technical Education: When business and school leaders decided to revamp Jefferson County's vocational education system in the late 1980s, a remarkable turnaround in the quality of local programs resulted. Poorly performing two-year vocational centers were replaced by four-year career magnet academies housed in comprehensive high schools, with new equipment, facilities, and curricula. Today, the county's vocational programs are striving to reach the high standards set by KERA. Most important, and in contrast to previous decades, the vocational programs are committed to achieving the same high standards as the system's academic programs.

In the coming years, Louisville faces a number of challenges as it moves to expand and institutionalize its progress, many of which it shares with other communities. One challenge will arise from efforts to offer more and deeper work-based learning opportunities in the face of pressure to improve student performance on state exams. Louisville will also need to find an affordable way to coordinate growing numbers of school-business interactions, particularly in light of the school system's tendency toward decentralized partnerships between single schools and employers. A third major challenge is achieving a proper balance between long-term education/work force strategies and short-term pressures that particular firms feel in a tight labor market.

THE CONTEXT

The Economy

Until World War II, the Kentucky economy depended on agriculture, tobacco, and coal mining. In the 1940s, manufacturing became the economic engine, peaking in the early 1960s at 35 percent of the Gross State Product. In recent decades, the service sector has grown steadily; such jobs now account for over three-fifths of economic activity. Distribution, retail trade, tourism, and other lower-wage industries now lead the way within the sector.

The city of Louisville, situated in rolling flatland on the Kentucky banks of the Ohio River, began growing as a commercial and transshipment center in the early 1800s. After World War II, Louisville and surrounding Jefferson County became a leading industrial center, with truck and auto assembly and appliance manufacturing the main industries. General Electric moved its entire home-appliance operation to the area in 1953.

In the 1950s, suburbanization began changing Louisville, and by 1972 the county's population had eclipsed that of the city. Downtown construction was at a standstill through this period until new sectors such as finance, real estate, and insurance began growing in the 1970s and Louisville's health care industry surged. Invigorated by leaders from the new industries, the Louisville Chamber of Commerce launched a campaign to attract business. By the late 1980s, this campaign had matured into an energetic economic development collaboration involving the business community and municipal and county agencies.[1]

Today, the city has over a quarter million residents, with a metropolitan-area population approaching one million. Household income in Jefferson County was $32,917 in 1990, well above the national average. The area's leading employers include Humana, Inc., which operates hospitals nationwide, Kentucky Fried Chicken's corporate offices, General Electric's appliance division, and United Parcel Service's air hub. In 1989, UPS became the area's second largest employer (after General Electric). Unemployment is low in both the city and the county. In January 1998, it was 4.1 percent in Louisville and 3.1 percent in the county.

Education

The Jefferson County school system encompasses both Louisville and its suburbs in the county, but the two systems were separate until

the 1970s. Although the city of Louisville had complied with the Supreme Court's 1956 *Brown v. Board of Education* decision—under a racial desegregation plan President Eisenhower called outstanding—a trend toward resegregation emerged in the 1960s. By 1968, 90 percent of the public school students attended predominantly black or white schools, and rather than desegregate, the Louisville Independent School System opted to cease operation in the early 1970s. At the request of the state Board of Education, the Jefferson County system assumed responsibility for the Louisville schools in 1974. The next year, the Sixth Circuit Court of Appeals ordered it to bus students between the county's white, suburban schools and the city's predominantly African-American schools.

Today, Jefferson County Public Schools (JCPS), with about 27,000 high school students and 96,000 students in all, is Kentucky's largest school district and the 24th largest in the United States. It employs 5,756 teachers at 87 elementary schools, 23 middle schools, 20 high schools, and 21 other learning centers. About 30 percent of the students are minorities. Of the teachers, 14 percent are African Americans.

DRIVING CHANGE: EDUCATIONAL EQUITY AND ECONOMIC DEVELOPMENT

Two priorities have shaped the involvement of employers in Louisville/Jefferson County education reform: concern for statewide educational equity, as addressed in the 1990 Kentucky Educational Reform Act, and a growing emphasis on economic development policy, with a focus on human capital and all levels of education, from pre-school through postsecondary.

State Education Reform: KERA

1989 was a pivotal year for Kentucky education. The state Supreme Court, ruling in favor of 66 less-wealthy school districts, declared funding inequities between rich and poor districts to be unconstitutional. The court ordered the state to lessen inequities in local education funding—and to produce a comprehensive reform plan within nine months.

Business, civic, and political leaders rose to the challenge and created the "most thorough and most coherently designed [education] reform in the country," according to Michael Timpane, former vice president of the Carnegie Foundation for the Advancement of Teaching.[2] In 1990, the legislature enacted the Kentucky Education Reform Act (KERA), equalizing funding between poor and rich districts through a 60 percent overall increase in state spending on education. In addition, the Act increased school-based authority and decision making, mandated statewide tests to measure school progress—with rewards and remedial assistance tied to school performance on the tests—and required the teaching and assessment of certain basic citizenship and work-related skills.

The business community played an active role in developing the reforms embodied in KERA. "Tired of retraining new hires and worried about losing employers to states with stronger labor pools, 50 companies led by Ashland, Humana and United Parcel Service backed the reform movement with money and lobbying," explained Jack Moreland, then a school superintendent and now president of Northern Kentucky University. "Since then, they've had a hand in curriculum reform, too, pressing for courses that teach practical, job-oriented skills."[3]

One KERA priority is to provide students with "sufficient preparation to choose and pursue [their] life's work intelligently." Similarly, the Act stipulates that schools be measured "on the proportion of students who make a successful transition to work, postsecondary education, and the military."[4] The state's business leaders, including many Louisville and Jefferson County employers, actively supported and promoted these and other provisions of the legislation.

KERA advocates considered it an investment in the future, realizing that the payoffs would take time to emerge. On standardized tests,

students in poor districts now score as well as those from richer schools. On state reading and math tests, the scores of fourth, eighth, and eleventh graders have climbed since 1992-93 across all levels. Fewer students test at the lowest level ("novice") and more have reached the higher levels ("proficient" and "distinguished").

However, there is still a long road to travel. On a scale of 0 to 140, average scores statewide range between 44 and 64 on reading and math tests; "proficient" (the goal for all schools by 2012) is 100.[5] High schools especially need improvement, according to Commissioner of Education Wilmer S. Cody. Dropout rates have not improved, test scores are far from KERA benchmarks, and scores on national college-admissions tests remain flat.[6]

KERA GOALS

1.Schools shall expect a high level of achievement from all students.

2. Schools shall develop their students' ability to:

a. Use basic communication and mathematics skills for purposes and situations that they will encounter throughout their lives;

b. Apply core concepts and principles from mathematics, science, the arts, the humanities, social studies, and practical living studies to situations they will encounter throughout their lives;

c. Become self-sufficient individuals;

d. Become responsible members of a family, a work group, or a community, including demonstrating effectiveness in community service;

e. Think and solve problems in school situations and in a variety of situations they will encounter in life; and

f. Connect and integrate experiences and new knowledge from all subject matter fields with what they have previously learned and build on past learning experiences to acquire new information through various media sources.

3. Schools shall increase their students' rates of school attendance.

4. Schools shall reduce their students' dropout rates and increase retention.

5. Schools shall reduce physical and mental health barriers to learning.

6. Schools shall be measured on the proportion of students who make a successful transition to work, postsecondary education, and the military.

Work Force Development as Economic Strategy

The commitment of the Kentucky business community to education reform, to a large extent, has grown from concerns about the state's ability to attract and retain quality employers in an increasingly knowledge-based economy. At the same time that business leaders were engaged in designing and campaigning for KERA, they also were promoting state and local economic development strategies rooted in the development of human capital.

At the state level, concerns about the quality of the work force led the General Assembly to create a Workforce Development Cabinet in 1990, the same year it enacted KERA. This agency brought most state employment and training entities together under a single, cabinet-level structure. Two years later, the legislature created an Education and Job Training Coordinating Council and a Cabinet for Economic Development to further integrate state work force development initiatives.

In Louisville, the labor market at the end of the 1980s was relatively low-skill and low-wage, as it was in Kentucky as a whole. Louisville was a good place to live and work, the economy was growing, and the region could attract firms seeking semi-skilled workers. However, the region was far less successful at bringing in firms that offered higher-wage technical, professional, and managerial jobs, nor was the higher

education system prepared for the task of helping the region "grow its own" high-skill labor force. Kentucky ranked next to worst among the states in the proportion of adults with a high school degree (despite a drop from 49 percent of adults lacking a degree in 1980 to 32 percent a decade later). Similarly, the percentage of high school graduates pursuing postsecondary education remained below average, even after a recent surge in college enrollment.

The Louisville business community has played a central role in several efforts to improve the quality of the region's workforce. Many business leaders point to the hiring of Donald Ingwerson as school superintendent as a key early event. Malcolm Chancey, then executive vice president of Liberty National Bank and Trust Company and chair of the Chamber of Commerce's Public Education Committee, helped guide the search for a person who could lead JCPS into an era of high expectations and performance.[7] The relationship between Chancey and Ingwerson, who served until 1994, was an anchor for strong business/education collaborations through the 1980s and 1990s, a pattern that has continued into the tenure of the current superintendent, Stephen Daeschner.

The business community also created the Kentuckiana Education and Workforce Institute (KEWI) in 1990 to help shape local economic development, founding it as an arm of the Louisville Area Chamber of Commerce.[8] With a grant from the James Graham Brown Foundation, the Chamber, then headed by Chancey, created KEWI to bring together business, education, labor, government, and community organizations. Its mandate was to identify the education needs of the current and future work force and to facilitate the creation of programs and partnerships that would meet those needs. A series of grants funded KEWI through 1996.

KEWI delineated 14 industry groups and identified issues common to firms within each. Each year, it administered surveys to determine the skill needs in the local economy, areas of worker shortages, and company hiring plans for the year ahead. At the same time, KEWI inventoried, and constantly updated the list of, work force education and training offerings available to area firms, including those available through public, private, firm-based, and other providers.[9] In 1992, as local school-to-career efforts began to grow, Superintendent Ingwerson and Louisville Mayor Jerry Abramson asked KEWI to coordinate those as well.[10]

By 1996, a tightening labor market, in conjunction with the expiration of KEWI funding, prompted business leaders to explore new approaches to organizing work force development efforts. The Louisville Area Chamber of Commerce and the Greater Louisville Economic Development Partnership, two major economic development agencies, commissioned Growth Strategies Organization (GSO) to prepare an economic development strategy for the region.

GSO's report, *Economic Development Strategy for the Greater Louisville Region*, has had two main effects. First, it has highlighted the essential role of work force/skill development in economic development. Second, it precipitated a reorganization of the local economic and work force development structure.

The report identified three factors limiting the region's ability to attract "high growth" industries:[11]

- The labor force lacked the required technical and professional skills.
- Academic resources were not geared to providing skills training or continuing education opportunities for workers in critical occupations.
- There was no significant academic research capacity in any key discipline.

The report laid out two options. Louisville/Jefferson County could expand the industrial

base incrementally, a course promising little growth in higher wage, higher skill occupations. Alternatively, the region could seek to establish several "technology niches," a competitive strategy that, although riskier, could attract more high-skill, high-wage jobs and workers.[12] For either strategy, GSO advised upgrading the K-12 system and higher education to generate graduates who could succeed in a changing economy.

The report led to the view that effective work force development required "one place where it could all come together," as a local leader said in an interview. The Chamber, acknowledging that it could better serve as one member of a broad umbrella organization, decided not to promote KEWI—its own arm—for that task. Instead, the Chamber joined key stakeholders from business, education, and government to form the Greater Louisville Area Workforce Development Council in 1996.[13]

The council has the mandate to provide vision for, and help drive, policy initiatives, rather than to serve as a governing organization. Thus, one of its early activities was to create a regional Visioning Task Force, which in turn produced a detailed economic development strategy based on the goal of "achieving a per capita income that represents 110% of the national average by the year 2010." Work force development was one of seven strategies for growth identified in the *Final Report of the Task Force*. That report also called for "integrating school-to-work programs with the economic visioning process" and said that the "regional education systems—K-12, technical schools and junior colleges—must become models for the nation in developing and retaining a competitive technical and professional work force."

The Task Force report recommended a merger of the Louisville Chamber of Commerce and the Greater Louisville Economic Development Partnership. This was accomplished in 1997, with Douglas Cobb of Chrysalis Ventures taking over as the CEO of the merged organization, the Louisville Area Chamber of Commerce.

EMPLOYER INVOLVEMENT IN LINKING SCHOOL AND WORK

Louisville's employer leadership has been deeply involved in improving the public schools for almost two decades. Its role has expanded and evolved as challenges and opportunities have emerged. Collaboration has been extensive at the level of individual schools and firms as well as district-wide on issues of academic standards and achievement, primarily in response to KERA. Also related to KERA, the business community has worked with the school district on improving preparation for careers through reforms in vocational education and, more recently, a proliferation of school-to-career initiatives.

Reforming Vocational Education into a Career Preparation System

By the mid-1980s, there was broad recognition, among both employers and educators in the Louisville/Jefferson County area, that the local vocational education system needed serious revamping. JCPS's two-year vocational programs, housed in seven centers outside the comprehensive high school system, relied on outmoded technology and focused too much on out-of-date technical skills and too little on academic achievement. As programs became less effective at meeting industry needs, business support and involvement declined, as did student enrollments.

Business and school leadership decided that the county's secondary-level vocational education system needed a major upgrade. The result was a remarkable turnaround in the quality of local programs. Soon after Ingwerson arrived, he appointed a team, composed of consultants and JCPS staff, to think about what preparation for work could look like in the district. The team included Bernard Minnis, recruited from the Kentucky Department of Education, and Regina Kyle, a consultant familiar with the Boston Compact and that city's efforts to forge closer business collaborations

with the public schools.[14] In 1988, Ingwerson established an executive committee charged with developing a new approach to vocational education and overseeing the reform process. Chaired by the CEO of Henry Vogt, a local manufacturer, the committee was composed of teachers, principals, JCPS staff, and business and community representatives.

The reforms that emerged had several key features:

- By 1992-93, JCPS had shut down its two-year vocational centers.
- The term "career and technical" replaced the term "vocational" to signal a JCPS commitment to upgraded academic and technical content, a commitment furthered by the 1990 enactment of KERA.
- JCPS reorganized vocational education into four-year programs at the comprehensive high schools and organized these programs as magnet career academies.
- Local administrators gained the power to recruit business partners for the academies and to solicit support from partners according to local program needs and employer resources and interests.
- JCPS promoted the establishment of formal, systemic linkages between the high schools and postsecondary education institutions.

The heart of the reforms was the decision to replace the two-year vocational centers with four-year magnet academies housed in the comprehensive high schools, with modernized facilities, equipment, and curricula. These academies would be organized by career themes based on the same 14 clusters as KEWI's industry committees.

Magnet schools appealed to the team designing the reforms for several reasons. One was Superintendent Ingwerson's priority on reducing the divisive effects of forced busing through programs that could *attract* students with special themes and enhancements. The planning team was also impressed by the high school career academies being established in Philadelphia, California, and elsewhere. That students had to apply for admission to the academies gave these innovative schools-within-schools a cachet that traditional vocational programs lacked.

Louisville's innovations were in keeping with a national movement to revive and upgrade vocational education—increasingly viewed as a "dumping ground" for problem students—through the integration of academic and vocational programs. Between 1988 and 1992, about $35 million was invested in closing the vocational centers and relocating and upgrading 50 programs. Each new academy had its own program planning committee of business people and educators. These planning teams received support from Louisville's Gheens Academy for Professional Development, a public/private partnership formed in the mid-1980s to promote thoughtful risk-taking among JCPS teachers and administrators. Funds were available for teachers and others to visit model sites around the country, attend conferences, and bring in expert assistance.

By 1995, the last pieces of these reforms went into place as Iroquois and Southern High Schools adopted construction and transportation as their magnet themes. For the 1997-98 school year, JCPS offers students a choice of 14 magnet career academies (see box, page 63). About 28 percent of the district's high school students are enrolled in them.

LEEP: Dropout Prevention and Career Planning for At-Risk Youth

A second ambitious innovation linking employers and schools, launched around the same time as the vocational education reforms, focuses on at-risk students across the system's high schools. In 1988, Mayor Abramson returned from a U.S. Conference of Mayors meeting excited about the Boston Compact as an approach to institutionalizing business-school collaboration. He enlisted Malcolm Chancey and Superintendent Ingwerson to build community support for replicating the Compact's

JEFFERSON COUNTY'S MAGNET CAREER ACADEMIES

The four-year career academies are organized in industry clusters. Some represent traditional vocational offerings, and some look ahead to new and emerging industries:

Butler Traditional/Technical High School: technology education (drafting, electronics) and data processing

Central High School: medical and allied health fields (including professional, technical, and service-oriented health-related careers)

Doss High School: child care, cosmetology

Fairdale High School: public safety technology (for careers in law enforcement, fire science technology, legal/medical office technology, emergency medicine, and other fields)

Fern Creek School: marketing, management, and entrepreneurship

Iroquois High School: building technologies (construction crafts, interior design, construction management)

Jeffersontown High School: automated manufacturing technology (with state-of-the-art technology)

Moore High School: printing and publishing technologies and graphic communications

Pleasure Ridge Park: chemical/plastics technologies, information processing, horticulture

Seneca High School: urban agriscience technology

Shawnee High School: aviation, travel and tourism, customer services

Southern High School: telecommunications, business support services, machine tool technology, transportation technologies

Valley High School: environmental research and technology

Waggener High School: hospitality

model in Louisville, with help from the National Alliance of Business, which was assisting such efforts in a number of communities nationally. The result was the Louisville Education and Employment Partnership (LEEP), a business/schools partnership to support at-risk students that emphasizes counseling and other assistance from school-based case managers. LEEP, which has served over 1,000 students annually since 1991, became one of Chancey's personal priorities. His support and outreach to his business peers have kept it alive long after the end of other attempts to replicate the Boston Compact and helped make LEEP a focal point for rallying employer involvement with the schools.

Sponsored jointly by JCPS, the Private Industry Council, the Chamber of Commerce, Metro United Way, and the city and county governments, LEEP created and funds career planner positions at JCPS high schools. These school-based case managers deliver an employability-skills curriculum and career counseling to economically disadvantaged students. The case managers also secure summer and part-time jobs for the students, linking the work to mentoring provided by employees of participating businesses.

A rigorous evaluation of LEEP, conducted by Ohio State University researchers between 1992 and 1994, showed a measurable impact on attendance, academic performance, and employment outcomes.[15] The evaluation compared the first LEEP students (freshmen in 1988) with a control group from the same class. As the evaluation report stressed, "The cards were stacked in favor of the controls." Because control group members were selected randomly, they were more "advantaged" than LEEP students on all background variables (e.g., family income and family education). "Despite this fact, in all instances, the Partnership graduates performed as well or better than the controls." In particular:

- LEEP students who had enrolled as freshmen stayed in school into the 12th grade at

a much higher rate (75 percent vs. 58 percent for the control group).

- While slightly more control graduates were employed at the time of the research (80 percent vs. 75 percent), the LEEP students "exhibited a greater diversity of types of employment with potential for growth . . . such as banking, insurance, and transportation."
- Despite higher family education levels for the control group, LEEP graduates were more likely to be enrolled in postsecondary education (36.5 percent vs. 34 percent).

About 100 employers have actively participated in LEEP in the past decade, and many of their contributions have been substantial. The Providian Company, for example, has funded the entire mentoring program in Iroquois High School.[16]

According to LEEP Executive Director Dennis White, a new partnership has been launched with PNC Bank, Humana and Jewish hospitals, and Bridgeman Foods (which owns fast-food restaurants) to help teen mothers on welfare move into family-supporting jobs. LEEP staff identify 40 young parents and provide them with world-of-work training for six weeks. LEEP then places the women in paid jobs at participating firms, where each works alongside a mentor. Because the project targets teen parents, it includes day care.

LEEP has mobilized large numbers of employers to work with disadvantaged high school students, but funding constraints limit the program's expansion. Also, because LEEP targets economically disadvantaged students, it is structured as an add-on or pull-out program and suffers in some schools from a lack of integration with other business partnerships that might strengthen its content and coherence. Yet despite these challenges, LEEP remains the major system-wide vehicle for attracting employer involvement with the schools.

School-to-Career: Employer Involvement in Providing Work Experiences

In 1994, Kentucky became one of eight states to receive implementation funding under the federal School to Work Opportunity Act, receiving a five-year, $24 million grant. Kentucky's inclusion in the first round of grant recipients opened new roles for employers as participants in governing partnerships, providers of work-based learning sites, and sponsors of employees who could help teachers update curricula. It also enabled Jefferson County to expand its school-to-career efforts, which had begun in 1992.

The state's application for federal school-to-work funds stressed the connections between KERA reforms and Kentucky's efforts to establish an effective school-to-career system. The application noted that KERA's assessment system "measures what a student knows as well as what he/she can do with that knowledge," sending a signal that all students "must be able to apply what they learn to real life situations and the workplace, [specifically] the ability to think and solve problems, work in teams, and commit to quality work performance."[17]

Blending KERA and school-to-career reform in Kentucky and Jefferson County would require integrating work experience with academically rigorous classroom studies. If successful, it would blur the distinction between vocational programming and the academic/college prep track, bringing practical education into the latter and significantly upgrading the academic content of the former. It would also provide opportunities for employers to collaborate with schools both as "consumers" who hire graduates of the schools and as partners in providing quality learning experiences for students during their school years.

School-to-career has become an umbrella for a large number and diverse range of JCPS programs, from elementary school through twelfth grade, including both traditional voca-

tional programs and academic ones. Stephen Daeschner, who succeeded Donald Ingwerson in 1994, has maintained JCPS's commitment to a district-wide approach to linking school and work. Although improving early childhood education is Daeschner's "signature priority," he has sustained the district's strong support for policies that encourage employer involvement, career preparation, and high standards in career-oriented programs. His blueprint for change, *Promise to Our Youth—A Guarantee to Our Community*, identified school-to-career as one of ten priority "areas of concentration." School-to-career efforts are now coordinated through the Career/Workforce Development Administration of JCPS, directed by Dr. Bernard Minnis, who helped plan the earlier reform of vocational education.

According to JCPS, local employers provided work-based learning opportunities to 4,186 students in the 1996-97 school year. These ranged in intensity from 817 job shadows to 1,117 paid and 2,252 unpaid co-op placements and internships. Employer-provided work-based learning is concentrated in the high schools, particularly the magnet career academies. JCPS makes work-based learning available to students through traditional "co-op" programs, primarily part-time jobs for twelfth-graders and newer internship models that tie work experience more directly to classroom curricula. JCPS schools are also noteworthy for involving employers in creating and supporting a number of impressive school-based enterprises.

Work-based learning at firms: Few of JCPS's firm-based programs are in the traditional trades or manufacturing. At least part of the reason lies in employer concerns about child labor and health and safety laws. And for small firms, in these and other sectors, it also relates to the difficulty of freeing up staff to participate as mentors.

Two noteworthy exceptions are the achievements of the recently formed Plastics Network and the Louisville Association of Plumbing, Heating, and Cooling Contractors.

The Plastics Network arose through a public-private collaboration. Plastics molding manufacturers (mostly suppliers to large manufacturing plants) found that the qualifications of high school graduates were falling behind as technical requirements in the industry rose. The regional economic development office and Kentucky's regional school-to-work office helped create a network of firms willing to work with the school system to upgrade its technology and its plastics-related program.

D.J. Plastics, Inc., a lead member of the network, connected with the principal of Pleasure Ridge Park High School. The company invested extensively in state-of-the-art equipment for the school and in developing a science and math technology curriculum. Participating students are eligible for co-op slots at the firm, which virtually guarantees them jobs after graduation. In 1995-96, 45 seniors took part in an intensive plastics technology course, jointly taught by school and D.J. Plastics staff. Students rotated through several job areas and could enroll in the firm's Total Quality Course. An exchange program between teachers and D.J. Plastics staff has been launched.

The plumbing and heating industry, similarly comprised of small or micro-enterprises, found it increasingly difficult to recruit qualified entry-level workers, and these firms, too, lacked effective collaborations with the schools. The executive director of the industry's state association, aware of federal and state school-to-career initiatives, helped the Louisville affiliate secure a small grant to connect member contractors with the Construction Academy at Iroquois High School and to defray the costs of several work-based learning slots at member firms. This small project has brought several firms into active partnership with JCPS and stimulated the association's interest in expanding the cooperation.

Among major employers, United Parcel Service has worked particularly closely with JCPS and supports two large-scale school-to-career programs for high school students. One program, based in Shawnee High's aviation career magnet, provides aeronautical mechanics training on the UPS fleet.[18] The second, at UPS corporate headquarters, includes mentoring, paid work (20 hours per week at 8 dollars per hour plus benefits), and a college course at Jefferson Community College. The initiative began in 1996 with 40 seniors from several high schools, expanded to 92 seniors in 1997, and is scheduled to grow to 200 students in 1998. The collaboration involves UPS, the JCPS school-to-career office, and LEEP, which first engaged UPS staff as mentors. In addition to student wages, UPS pays the salary of a full-time program director, the salary of 4 UPS staff members whose regular workload has been reduced so they can mentor 25 to 30 students each, and community college tuition fees.

WINGS: UNITED PARCEL SERVICE AT WILLIAMS MIDDLE SCHOOL

A number of UPS managers, including Cynthia Read of the corporate public affairs office, worked closely with teachers at Williams Middle School to create WINGS—"Workplace Integration Nurturing Good Students." A work-based-learning curriculum, WINGS engages students in the challenges of UPS' core business: ensuring that time-sensitive packages reach the correct destination on time. All eighth grade classes at the school participate in this partnership with the UPS air service center.

Students learn the basics of the center's package-tracking technology and explore the variables that can affect success. Weather and geography, time zones and time-keeping, math for calculating fuel consumption, critical thinking skills to decide among less-than-optimal options, and teamwork skills to divide tasks and coordinate responsibilities—all have been built into the curriculum, which combines classroom activities with visits to the air service center.

The curriculum culminates in an extended crisis-management simulation. A plane to Louisville is snowed in. The students must activate back-up procedures to get packages to the Louisville air hub on time to be loaded on other planes for their ultimate destinations.[19]

JCPS's work-based learning opportunities have expanded into several high-skill industries and professions. For example, Providian, one of the region's key financial services firms, has sponsored a program for juniors at Pleasure Ridge Park High School since 1984. A teacher from the school and business executives from Providian collaborate to teach classes in such topics as investor relations, stocks, and other finance and insurance issues. Students learn interview techniques and telephone skills and become familiar with Providian's computer hardware and software. At the end of course work, each student interviews for a six-week paid summer internship with the firm. The performance of the summer interns is evaluated, with bonuses tied to the results. At the end of the summer, participating students become eligible to compete for a $16,000 scholarship.

The Health Professions Partnership is a new project to help JCPS students, particularly disadvantaged students, choose and prepare for challenging careers in health care. With multi-year funding from the Robert Wood Johnson Foundation and the University of Louisville Health Sciences Center, the latter has teamed with JCPS to reach elementary, middle, and high school students and also support University of Louisville undergraduates in health careers. The high school component, located at Central High School, pairs 150 students from the Health Professions Magnet with mentors—physicians, professors, and medical and dental students from the university and the medical community. The program involves both students and teachers. For example, University of Louisville faculty and medical residents take

SENDING STUDENTS THE RIGHT SIGNALS

All too often, employers disconnect their hiring and employment policies from their goals for public education. For example, employers may complain about young people's academic skills, yet hire students without asking about grades. Similarly, an employer might require long hours of employment that interfere with homework.

Superintendent Daeschner wants to encourage Jefferson County schools and employers to align the signals they send to students who work. In his previous superintendency he helped create communication channels between schools and employers to keep firms informed about student-workers' attendance and grades. Employers, in turn, limited the privilege of employment for students having trouble in school. According to Daeschner, JCPS hopes to launch a comparable initiative that will focus, at least at first, on fast-food providers and improving student attendance.

part in classroom exchanges with teachers in the participating schools.

In another effort, the Office of the Commonwealth Attorney collaborates with Central High on a law and government program. Commonwealth attorneys provide shadowing opportunities for sophomores, mentoring for juniors, and some limited internships for seniors. In 1996-97, about one fourth of the 36 attorneys in the Louisville office served as mentors.

School-based Enterprises: Louisville employers and JCPS have creatively adopted the school-based enterprise as a model for work-based learning. A sponsoring employer contributes resources and expertise to establish student-run businesses that serve staff and students. Three student-run businesses, some with multiple sites, operate in the high schools, supported by Kentucky Fried Chicken, Kroger, and SuperAmerica. Some school-based enterprises operate in middle and elementary schools as well.

The Kentucky Fried Chicken franchise at Central High School is representative. KFC donated a large, fully operational mobile unit that sits on a busy street next to the school. The company provides supplies and an on-site manager-trainer who works closely with a counterpart business teacher. Participating seniors are responsible for all management functions. Younger students prepare and serve the food. Profits go to a scholarship fund for participating graduates.

School-based enterprises have a number of advantages over projects within a firm. Students do not need transportation to distant sites. Proximity to the school also facilitates collaboration between school-based teachers and work-based supervisors. And it is easier for staff from the sponsoring employer to modify a program to enrich the student experience. The SuperAmerica liaison, for example, has connected students with a similar program in a Caribbean school to learn about importing.

On the other hand, students in a school-based enterprise do not experience day-to-day life in the sponsoring firm. The KFC program initially offered work-based opportunities at headquarters so students could learn about management. Unfortunately, KFC dropped these slots after a wave of corporate restructuring.

LOOKING AHEAD: STRENGTHS AND CHALLENGES

The evolution and status of partnerships between employers and JCPS demonstrate significant progress in a number of areas—as well as some of the difficulties of building and sustaining district-wide collaboration. Louisville's accomplishments and the challenges it faces in pursuing four strategies are instructive for other communities:

- Long-term working relationships between employers and schools;
- Education reform as economic development;

- Employer intermediaries; and
- High standards in academic and vocational/technical education.

Long-Term Working Relationships

Jefferson County employers have played key roles throughout the past two decades in helping plan, implement, and govern initiatives to improve public education and workforce development. Business leaders, the school district's administration, and local government have worked together closely and effectively. This stability has enabled relationships of trust and understanding to take root.

The extent of business involvement with public school reform in Jefferson County—along with consistent business support and pressure over an extended period of time—is exceptional. Few communities can point to such a sustained and thoughtful commitment by business leaders in school reform efforts. For two decades, the stability and savvy of the leadership group has been a force for progress. For example, employers in the region were deeply involved in efforts to reform vocational education, both through the overall steering committee and industry advisory groups. Employers also played a critical role in the design and the selling of KERA.

Perhaps the most influential business leader has been Malcolm Chancey. A prominent banker and Chamber of Commerce leader, he has been critical for his vision, energy, and commitment. As head of the tax-exempt Louisville Public Education Fund, which originated in the Chamber of Commerce Education Committee, Chancey has raised and helped channel private-sector funds to support public education. He has had a hand in hiring school superintendents and in setting vision and strategy for work force development. He says he has consistently articulated a single theme: "It's [business's] job to help fix things in education."

Chancey has not acted alone. While business-education collaboration began through informal and personal ties among Chancey, Superintendent Ingwerson, and Mayor Abramson, the relationships have been formalized over time and extended to new leadership, including Stephen Daeschner, the current school superintendent, and Douglas Cobb, new head of the regional Chamber of Commerce. Moreover, the local employer community has broadly supported and participated in initiatives to link schools and work, particularly through LEEP.

At times, the close-knit group of employer leaders on education and workforce issues has appeared as a small "interlocking directorate," with a small number of individuals determining the direction and strategy of a variety of initiatives. However, this dynamic has not stifled the emergence of a younger generation of leaders, epitomized by Cobb. Neither has it weakened the participation of the city's employers in education-related partnerships.

Education Reform as Economic Development

Louisville's business leaders are convinced that the region's long-term economic well-being is intertwined with the progress of education reform. Louisville has historically been a lower-skill, lower-wage community. To improve on the local standard of living and the attractiveness of Louisville to national employers, workforce education and skills are increasingly critical. For this reason, education reform is an ongoing priority.

The emphasis on economic development dominates business collaborations in the region, and, to a large extent, education reform is seen through this lens. This is certainly true of local school-to-career efforts. Moreover, employer organizations have tended to frame the benefits of school-to-career efforts in the region's high schools in economic as well as academic terms. Business organizations that are engaged in planning the region's future explicitly include school-to-career as part of the overall regional economic development program.

This economic development perspective has helped engage employers, yet also presents predictable dilemmas. For example, the economic development perspective generates a healthy but complicated debate about how to balance, and when to trade off, long-term investments in education and short-term investments in adult skill training. School-to-career as a priority must compete, for example, against the short-term need to address specific skill bottlenecks.

Through its Visioning Task Force, Louisville has created a forum for addressing competing work force development priorities in the context of a regional strategic plan. The Greater Louisville Area Workforce Development Council has become a regional entity with sufficient credibility and reach to advocate both school-to-career and other education reforms and solutions to immediate work force development needs.

Employer Intermediaries

Louisville's employers have an impressive history of involvement in, and leadership of, governance and planning of local school reform efforts. Few cities can boast such consistent and thoughtful involvement. However, the community has struggled at times to find the most effective way to organize employer interests and make ongoing employer participation easier. There has been overlap in mandate and activities, for example, between the state-created regional Local Labor Market Area 13 and the smaller Jefferson County administrative unit. Similarly, KEWI's location within the Chamber proved limiting, leading community leaders to replace it with the broad-based partnership that has emerged in the Greater Louisville Workforce Development Council.

On the operational level, Jefferson County has been slow to create and fund an intermediary organization staffed and structured to be the operational link between businesses and the schools, a body comparable to Boston's Private Industry Council. The various employer collaborations have focused primarily on policy and governance rather than the day-to-day coordination of work-based learning initiatives and opportunities.

JCPS, too, has held back from creating a district-wide intermediary with sufficient staff capacity to play a coordinating role. The school district's central office school-to-career staffing is lean. This, combined with Jefferson County's emphasis on school-based management since the 1980s, has encouraged individual schools to be entrepreneurial in pursuing and managing business partners and work-based learning opportunities for their students. LEEP career counselors have played this connecting role to some extent, but only for a specific segment of the high school population and primarily in securing mentors rather than work experiences. With limited district-wide coordination, assertive and creative schools and principals can take advantage of this "every school for itself" approach. However, this decentralization runs the risk of distributing the benefits of employer partnerships unevenly across the system and of producing duplicative and competing requests from schools to individual firms.

The local business community may be ready to increase its investment in infrastructure to support business participation. The Workforce Development Council, with Superintendent Daeschner's support, has created a School to Career Committee that has both planning and governance functions. In addition, Local Labor Market Area 13 has begun to play certain connecting and convening roles in linking school and work. Even as LLMA 13's funding through the federal School to Work Opportunities Act comes to an end, it is finding new support locally. Employers, the schools, and the regional chamber are all investing in its future, indicating a commitment to school-to-career efforts and to institutions that can play the connecting role between the two key partners.

High Standards in Academic and Vocational/Technical Education

After local business and school leaders decided that the secondary-level vocational education system needed a major upgrade, the result was a remarkable turnaround in the quality of these programs. JCPS replaced poorly performing two-year vocational centers with four-year magnet academies housed in the comprehensive high schools and organized by career themes. Today, the career magnet high schools, like all Kentucky high schools, are struggling to reach the standards set by KERA for student achievement. This is a significant accomplishment.

However, the compatibility of school-to-career curricula and instructional strategies with KERA is a challenge Jefferson County schools are just beginning to confront. On the one hand, KERA's goals and its emphasis on assessing student performance were designed to drive teachers toward greater experimentation with performance-based classrooms, an approach quite compatible with school-to-career pedagogy. At the same time, KERA mandated a "high stakes" assessment test, and it tied sanctions and rewards for schools to school-wide performance. With the publication of test results, schools and teachers have felt growing pressure to limit classroom experimentation, focus more on covering curriculum, and prepare students for the test, which itself has moved toward more easily measurable questions from an earlier emphasis on performance. These pressures are being felt across Louisville's schools, as across the state.

How will this accountability system affect the creation and use of learning experiences outside the classroom, in the community and workplaces? The answer to this key question will emerge in the coming years. To a significant extent, the level of integration of academic and vocational learning—and the future of work-based learning as an instructional approach—depend on how KERA implementation plays out in the system's high schools.

INTERVIEWS

Pamela O. Anderson, Executive Director, Louisville Private Industry Council

Michael Byrne, Director, University of Louisville Health Sciences Center Special Programs

Malcolm Chancey, Director, Greater Louisville Area Workforce Development Council

Douglas Cobb, CEO, Chrysalis Ventures

Dr. Stephen Daeschner, Superintendent, Jefferson County Public Schools

C.M. Hancock, Executive Director, Kentucky Association of Plumbing-Heating-Cooling Contractors, Inc.

Thomas Kelly, Director of Quality Control and Training, Publisher Printers

Jean Litterst, Manager, Public Affairs, Kentucky Fried Chicken

Bernard Minnis, Director, Jefferson County Public Schools Career/Workforce Development Administration

Linda Neal, Coordinator, Local Labor Market Area 13 School to Work Partnership

Dennis Quinlan, Executive Director of Foundations, Alliant Health System

Cynthia Read, Internal Communications Manager, United Parcel Service,

Kathy Shireman, RN, LNHA, Administrator, Christian Church Campus of Louisville

Sean Stallard, Human Resource Specialist, Kroger Co.

Joan Stringer, Assistant Commonwealth Attorney, Office of the Commonwealth Attorney

Rande Nortof Swann, Public Relations Director, Regional Airport Authority, Louisville and Jefferson County

Wayne Sweazy, D.J. Plastics, Inc.

Dennis White, Executive Director, Louisville Education and Employment Partnership

Jack Will, Director, Metroversity

LADELPHIA: Integrating School-to-
ɔer with the "Children Achieving" Agenda

Basil J. Whiting

The Philadelphia School District is the nation's fifth largest and one of the country's most troubled. It has made a strong commitment to reform, however, with the goal, says David Hornbeck, school superintendent since 1994, of making Philadelphia "the first major American city where virtually all its public school children perform at high levels."

Philadelphia has already made significant progress on its ambitious reform agenda, thanks in part to the business community's leadership, financial resources, and mobilization of support. Employers have played a particularly important role by providing work-based learning opportunities to students, especially at the high school level.

As part of its broad educational reform agenda, Philadelphia has created—and begun implementing—one of the nation's most extensive school-to-career visions. However, this process has a very long way to go. A sympathetic nonprofit head calls the effort "the last best chance for this school system." Philadelphia finds itself in a race between the complex, slow pace of change in urban schools and the limits of political and public patience and support.

BACKGROUND

The Challenge of Economic Change

Despite gleaming new office towers, the City of Brotherly Love is reeling from a series of blows to its economy. In part these are blows that many cities have suffered: suburbanization that has drained jobs and the parallel increasing concentration of the disadvantaged. As in other cities, manufacturing has declined and the service sector grown; wages have stagnated or fallen, and educational requirements for success in the labor force have risen.

While Philadelphia is still the core of the nation's fourth largest megalopolis, its population has declined, from 2 million in 1960 to 1.5 million in 1995. Employment fell from 782,000 in 1980 to 688,000 by 1994, affecting every sector except services, which grew by 46,000 jobs from 1982 to 1994. Deindustrialization has been dramatic: in 1972, manufacturing provided 23 percent of city employment, but by 1994 that proportion had dropped to 9 percent.

The overall job loss is slowing and was the lowest in recent years in 1996. Yet, that slowdown masks the continuing loss of well-paid manufacturing jobs and growth in the lower-paying service sector. Moreover, the national recovery has been slow to take hold in Philadelphia: unemployment dropped from a peak of 9.5 percent in 1993 to 6.2 percent in January 1997, leaving it almost a full point above the U.S. rate of 5.4 percent.

Greater Philadelphia's difficulties have stimulated business leaders to identify and confront its competitive disadvantages. Among the most active business groups has been Greater Philadelphia First (GPF), an organization led by the CEOs of the region's 35 largest private-sector employers. GPF's 1995 report, *An Economic Development Strategy for the Greater Philadelphia Region*, concluded that "Greater Philadelphia is falling behind" and challenged the region to "avoid drift and decline, allowing

other regions to pass it by."[1] Urging the region to "improve its competitiveness as a business location," the report advanced a 12-point strategy that included initiatives related to human resources, economic growth, and public-private policy. One recommendation, in particular, applied specifically to education: "radically reform the region's troubled public school systems. . . . Successful public schools are vital to the development of a skilled workforce."

In 1996, another GPF study, this one conducted jointly with the Pennsylvania Economy League, echoed that conclusion. It attributed the sluggish economy in part to a labor force "ominously out of synch with that of more successful regions. With 33 percent of its work force having earned only a high school diploma . . . this region's labor pool is skewed toward the low end of the educational spectrum."[2] The underdeveloped work force was particularly troubling because "such talent is not efficiently imported from other regions. Greater Philadelphia has no choice but to grow its own technical workers."

The Philadelphia School District

Greater Philadelphia First was not alone in its view of education. Many Philadelphians had long felt that the city's 258 schools, served by over 12,000 teachers, required nothing short of radical reform. The schools were failing the community, the economy, and most of their 217,000 students. A corporate senior vice president interviewed for this study said that 90 percent of the 19,000 jobs at his firm "could be filled by high school graduates—if they were any good. But business simply can't get good people at that level. The high schools are just pumping illiterates into the marketplace."

The Philadelphia School District has long been considered one of the nation's most troubled, its central office seen as bureaucratic and moribund. Some schools are "like prisons," said one teacher, plagued by violence, pregnancy, truancy, and underachievement. At the high school level, where this study concentrates, drop-out rates have ranged from 40 to 60 percent. In April 1997, *The New York Times* observed that "fewer than 6 percent of the city's high school students tested as competent in reading."[3] Only two of the city's high schools surpassed the national SAT average. One result, reported *The Times*, was that "the children of the city's middle class—including its politicians—have fled to private or parochial schools." The rest could seek admission to one of the district's four Area Vocational Technical Schools, eight selective Magnet Schools, or a few specialized high school programs, such as the Academies (see box below), the Motivation

THE PHILADELPHIA HIGH SCHOOL ACADEMIES

Philadelphia is recognized as the "mother" of the career academy movement, predating the other major cluster of academies in California and those sponsored by the National Academies Foundation. Philadelphia began its first academies almost a quarter century ago. Over the years, these 200-to-250-student "schools within schools" have multiplied; 28 academies now serve selected students in 19 of the city's 22 comprehensive high schools.

Each academy is organized around an occupational or career theme, and each has a governing board of business people who help design career-related curricula, provide a range of supports, and often hire juniors and seniors for after-school and summer work. Over 200 employers provide supports to academies. In the last decade, Philadelphia High School Academies, Inc., a free-standing, business-led, business/foundation-funded nonprofit organization, has coordinated the academy movement.

Until recently, admission to academies was selective. Now, any student can request assignment to an academy, and some students are assigned to them randomly. Academies enrolled 4,700 students in 1996-97, including 1,223 juniors and 898 seniors, about 9 percent of the district's juniors and seniors. Many teachers spend full time in an academy and stay with a class of students year after year, providing continuity. Also, many academy students are "block rostered" to spend most of their time with the same small number of classmates.

programs, and Communities in Schools. Yet these were islets of relative success. As a group, the 22 comprehensive high schools well merited GPF's prescription of "radical reform."

PHILADELPHIA'S AMBITIOUS SCHOOL REFORM AGENDA

Early Roots in Vocational Education

An important precursor of Philadelphia's current reforms was the concerted effort by civic and educational reformers in the late 1980s to improve the city's comprehensive high schools, especially the dismal vocational programs. In the early 1990s, that effort led to the creation of the Office of Education for Employment. Its head is Mary Jane Clancy, recruited from the well-regarded Rindge School of Technical Arts in Cambridge, Massachusetts. Rindge has been a pioneer in engaging students with the "real world" through a range of structured projects and exposures to real workplaces.

As Clancy set about the task of reinvigorating vocational education, she grasped the opportunity afforded by the emerging "school-to-work" movement. In 1992, her office launched a modest but pioneering 12-student youth apprenticeship in manufacturing as part of the state's early experiments with this approach, which had students spending two days per week at work. "We had to transport [the students] to small shops and other businesses in the suburbs because manufacturing was declining in Philadelphia," Clancy recalls. "But over the year, it really impressed me how much the students improved in almost every respect." According to Clancy, upon graduating, all the students were directly hired by their employers, began formal apprenticeships, or entered college.

Thus encouraged, the Office of Education for Employment expanded its programs into targeted growth industries. It established "stakeholder" groups in each sector, and employers were soon offering a few hundred work-based learning experiences.

A New Superintendent and "Children Achieving"

Meanwhile, Mayor Edward G. Rendell and business and civic leaders had become determined to transform the schools. In August 1994, at the recommendation of a search committee that had prominent business leadership, the school district hired David Hornbeck as superintendent. An educator and consultant, he had played a key role in designing the well-regarded 1990 Kentucky Education Reform Act.[4]

Hornbeck used the attention and leverage afforded by his arrival to generate community commitment and support for reform. To study different aspects of the system, he appointed six task forces, each with broad community representation, including prominent business leaders. Late in the 1994-95 school year, he incorporated the task-force findings into Children Achieving. This 10-point reform agenda called for comprehensive, integrated reforms rather than a "pick and choose" menu of projects (see box, page 75).

The Children Achieving agenda constituted a "systems change" approach and made school-to-career a primary strategy for promoting community and employer involvement in reform, particularly at the high school level. The federal School to Work Opportunities Act had just been enacted, and Hornbeck believed that school-to-career principles could help schools improve student motivation and achievement. At the Office of Education for Employment, Children Achieving ratified the efforts of Clancy and her internal reformers, while also providing them with a powerful impetus to move forward and a strong base of support. And Children Achieving challenged employers to become involved in education—and especially school-to-career—in ways that were new in both nature and scale.

The Children Achieving agenda quickly received support from the school board and local stakeholders, especially business. Several funders came forward, among them the Annenberg Foundation, which was implement-

CHILDREN ACHIEVING: A TEN POINT PLAN[5]

- Set high expectations for everyone
- Design accurate performance indicators to hold everyone accountable for results
- Shrink the centralized bureaucracy and let schools make more decisions
- Provide intensive and sustained professional development to all staff
- Make sure all students are ready for school
- Provide students with the community supports and services they need to succeed in school
- Provide up-to-date technology and instructional materials
- Engage the public in shaping, understanding, and supporting and participating in school reform
- Ensure adequate resources and use them effectively
- Address all of these priorities and for the long term—starting now

ing a national school initiative of large "challenge" grants that required two-for-one local matches. Annenberg gave Philadelphia $50 million, lodging administrative oversight for the grant at the Children Achieving Challenge, a new unit at Greater Philadelphia First.

Restructuring the System

Since the announcement of Children Achieving, the Philadelphia School District has reorganized its 6 large regions into 22 "clusters" based on history and geography. Each cluster centers on a comprehensive high school, fed by neighborhood-based middle and elementary schools. The district has delegated some central-office functions to the clusters, and it has assigned the special-admissions Magnet Schools and Area Vocational Technical Schools to clusters based on their locations. Each comprehensive high school has been restructured into small learning communities (SLCs) of 200 to 400 students. All high school students choose an SLC; those not stating a preference are assigned randomly.[6] There are 133 SLCs in the 22 comprehensive high schools, each with a full- or part-time coordinator.

As of the fall of 1997, 15 of the 22 clusters had formally adopted school-to-career principles and instructional strategies at all levels—elementary, middle, and high school. While the clusters are at varying stages of changing curricula to reflect a career or other theme, all are gradually introducing teaching strategies that reflect contextual learning approaches, which are supported by six staff development specialists trained in school-to-career practices. Throughout the district, 84 of the 133 high school SLCs have formally adopted school-to-career. Most, but not all, are in the 15 school-to-career clusters. The district plans to bring all clusters and high school SLCs into school-to-career over time, as resources for curricula and staff development can support such changes.[7]

Within two years, according to district plans, a Cluster Resource Board will support each of the 22 clusters. These boards will be composed of representatives of employers, the city, teachers, parents, students, unions, universities, school board members, police, community organizations, and other stakeholders. Their task will be to mobilize resources to meet each cluster's needs, including work-based learning opportunities for high school students. Leading each board will be a major corporation that essentially "adopts" the cluster. As of the fall of 1997, five employers had agreed to be Sponsoring Senior Partners in four clusters, with another employer considering taking on two clusters.

Finally, School Councils are being established at each school. Composed of the principal, parents, teachers, and administrators, each council will be a school's internal governing body, with responsibilities that include reviewing budgets.

Work-Based Learning Opportunities

Within this structure, the school-to-career goal is to give every student a range of career-preparation and exploration opportunities each year, including rich, real-world learning engagements that are appropriate to his or her interests, grade level, and personal development. The district has concentrated at the outset on work-based learning opportunities at the high school level, with plans to gradually extend such approaches downward to the middle and elementary schools.

The bulk of these rich learning engagements for high school students are intended to be work-based. The main sequence begins with voluntary and service-learning opportunities at government or community organizations in the ninth grade; in the tenth grade, it continues with job shadowing, field trips; and some unpaid internships. The sequence peaks in the eleventh and twelfth grades; eleventh graders spend a full day per week in paid work at a public, private, or nonprofit employer related to the Small Learning Community's theme. In 1998, this has increased to two days per week.[8] In addition, a roster of other work-based learning experiences and other kinds of learning engagements outside the classroom buttress the main sequence. These include opportunities to explore careers through special projects, school-based enterprises, guest speakers, and visits to external organizations.

SCHOOL-TO-CAREER PATHWAYS, SCHOOL DISTRICT OF PHILADELPHIA[9]

	Elementary School	Middle School	Grade 9	Grade 10	Grade 11	Grade 12	Postsecondary Education/ Employment
Career exploration (e.g., guest speakers, interest assessment, career fairs)	■	■	■	■	■	■	
Field trips	■	■	■				
Student-run enterprises	■	■					
Community service learning	■	■	■				
Job shadowing	■	■	■	■	■	■	
Mentoring		■	■	■	■	■	
Middle school to high school transition activities		■					
Unpaid internships			■	■			
College and work-readiness curriculum			■	■	■	■	■
One to two days of paid work-based learning					■	■	■
Postsecondary preparation			■	■	■	■	
Credit for courses taken at high school, in partnership with two- or four-year institutions			■	■	■	■	■
Next Step Center available to link students with jobs and/or education						■	■

In the middle schools, the district emphasizes service learning: students work with government or community-based agencies on structured community service projects related to classroom curricula. Students document these experiences in journals and classroom reports. In addition, middle schools are exploring school-based enterprises. Students operate retail and other services (fast food, school supplies, banking, etc.) catering to the student population or in some cases the community.

THE EMPLOYER ROLE

The Superstructure of Leadership

When it comes to reform, says a civic leader interviewed for this study, the Philadelphia business community lacks "a tradition of stepping up to major public issues like you see in other major cities." But a deeply engaged CEO of a major international corporation believes the real issue is that "business in this town is much more fragmented than in most of the other places where we do business."

The Pennsylvania Economy League study referred to earlier supports the latter view. In lamenting "the absence of a strong voice articulating a shared work force development vision," the league points out that Greater Philadelphia's diverse economy has "multiple, mid-sized workforce markets to be served," rather than a dominant industry or a few dominant employers.

Several additional factors further hinder business involvement in reforming the schools and the workforce development system. The leader of a nonprofit organization pointed out: "The mergers and takeovers of the last decade or so have made Philadelphia much less a headquarters city and much more a branch manager town." A senior business leader agreed: "We have a lot of big companies now with headquarters elsewhere. This leads to local business leadership with a different view of responsibility to the city and less freedom to initiate on their own." Moreover, the largest employers in the city are government, academia, and hospitals and other health care institutions. While some or all of these are represented on most employer organizations and civic leadership groups, they are clearly "different" than for-profit firms.

For this fragmented business community to act effectively requires strong leadership and a high degree of organization to shape and facilitate employer engagement. Such a structure is emerging most clearly around the Children Achieving reform agenda.

At its pinnacle is Greater Philadelphia First. GPF has established and houses a Partnership for Reform of the schools, headed by major business leaders, and it helped lure David Hornbeck to the city. To support Children Achieving's planning and implementation efforts, GPF has established subcommittees within the Partnership for Reform. One of these is the Children Achieving Challenge, which oversees the Annenberg Challenge grant; the other is the School-to-Career Leadership Council, formed in 1996.

The Leadership Council is a broad oversight group created to guide and support school-to-career policies and programs. It is chaired by Rosemarie Greco, then president of CoreStates, the region's largest bank.[10] Its two co-chairs are H. Lawrence Wilson, chairman of Rohm and Haas Company (and of the board of the Philadelphia High School Academies, Inc.), and Temple University Provost Dr. James England.[11] Leadership Council subcommittees generate employer involvement in school reform, promote public understanding and acceptance of reform, and generate resources to carry reforms forward. A key council function is to guide and support the 22 Cluster Resource Boards, and its first task has been to find major employers willing to become the Senior Partners for the clusters.

Heading the Leadership Council is not a figurehead role for Ms. Greco. A former school teacher who worked her way up from an administrative assistant position at CoreStates, she says, "I've been pushing this for ten years, and

THE SCHOOL-TO-CAREER LEADERSHIP COUNCIL MISSION STATEMENT[12]

We Believe

- For Philadelphia to thrive, all its residents must be well educated and prepared to participate in a competitive economy.
- As go the neighborhoods, so go Philadelphia and the region.
- The strength and health of neighborhoods depend upon full and equal participation in the economic system.
- The job market demands are increasingly outstripping the performance capabilities of neighborhood youth.
- Participation in the changing marketplace depends upon greatly improved educational opportunities for our youth.
- Our children can achieve but their success depends upon the strategic prioritization and specific improvements in:
  - standards of performance for both educators and children;
  - college access and completion;
  - job availability and performance;
  - health and safety;
  - student and parental involvement/support;
  - better delivery facilities; and
  - public/private/community partnerships.

Therefore, we resolve to work together, jointly take ownership of the School-to-Career Initiative, involve all relevant constituencies and see to the provision of needed resources and the removal of unneeded barriers toward the end of ensuring that all School District of Philadelphia children have the opportunity and the encouragement to become full participants in a productive society.

I've had to drop most of my other community activities to do it. And I'll keep doing it. Especially now, when it's finally coming together."

CoreStates senior vice president Tom O'Rourke has taken a lead role on the Leadership Council. According to O'Rourke, it was CoreStates that proposed the creation of the Cluster Resource Boards and their leadership by a Senior Partner with substantial resources. "We decided we had to lead the way and take on the Kensington Cluster," says O'Rourke, adding, "This has historically been one of the worst performing clusters in the district—heavily Hispanic, more than 50 percent below the poverty line, and as high as 40 percent unemployment, 30 percent of whom have never worked at all."

CoreStates had already been engaged with Kensington,[13] but its level of involvement through the Resource Board is much more intense. O'Rourke describes the "kinds of investment . . . senior partners are going to have to be willing to look at" in addition to offering jobs to graduates. For example, CoreStates is "putting a lot of volunteers into Kensington, and we'll easily spend a quarter of million dollars this year . . . in terms of time and dollars."[14]

While the Cluster Resource Boards will mobilize a range of supports, one major role, with the School-to-Career Leadership Council, will be to develop student work-based learning opportunities. To assist this effort, sector stakeholder groups, created earlier in the decade, are being revitalized and reconstituted as "partnerships." As of the fall of 1997, 8 of these have been restructured, with 22 to 25 member employers each, and they have held their first meetings. These sector partnerships will work with SLCs whose theme is their industry, advising on curricula and organizing sector employers to offer work-based learning experiences and other supports for school reform.[15]

As one CoreStates staff volunteer says of the work in Kensington, "It's too early to be sure, but so much is going on there that hope now exists. Attendance is up six percent, and the presence of paid work-based learning has excited much more interest in going to college."

Staffing the Work-Based Learning Effort

Alongside the employer superstructure is the staff-level, day-to-day function of recruiting and supporting school-to-career employers. A new Employment Services Unit at the Office of Education for Employment temporarily houses six "business relationship managers."[16] Recruited from the business world, they promote employer involvement in school-to-career, particularly by providing work-based learning experiences.

The district and the Leadership Council intend to relocate the business relationship managers to a business-based, service-oriented intermediary in the near future and to charge it with recruiting employers and supporting their involvement in work-based learning. Almost everyone interviewed for this study felt that such a business-based intermediary was essential for recruiting the medium-sized and small employers whose participation is needed to secure large numbers of work-based learning experiences. At the end of 1997, the Philadelphia Chamber of Commerce established a new position, vice president for education, with partial financial support during the first year from the district. It is likely that the business relationship managers will shortly move to a new home with the Chamber.

At present, if an employer decides to provide paid work-based learning experiences to juniors and seniors, the business relationship manager will arrange for a half day of orientation and training for worksite mentors. The district provides this training, which draws on the expertise of the Philadelphia chapter of One-To-One, a national organization specializing in promoting and assisting mentoring for youth. In some cases, the manager can also arrange tax incentives or subsidies to defray the cost of hiring students.

Preparing and Placing Students

Meanwhile, within school-to-career Small Learning Communities, students are prepared for work-based learning by coordinators and teachers supported by 15 placement specialists of the Office of Education for Employment.[17] This team coaches juniors and seniors on job appearance, behavior, and interview techniques. Most of the students also compile a portfolio of job applications, report cards, recommendations, and samples of school work. For the paid one-day and two-day opportunities, juniors and seniors must have a C average, good attendance, or otherwise be deemed "job ready."

The Office of Education for Employment placement specialists visit schools, review student portfolios, and conduct mock job interviews. They score each student on various aspects of job readiness, including professional appearance and communication and technical skills,[18] referring at least three candidates to each participating employer for interviews and final selection.

Once an employer selects a student, the employer-based mentor, the student, and the placement specialist design an individualized learning plan that will serve as the basis for periodic employer performance ratings of a student's progress at work. The work-based learning opportunities are expected to help provide critical "cross-cutting" competencies, such as teamwork. These track closely with the SCANS skills that most employers understand and value and that are included in the district's new academic performance standards.[19]

The mentors' training orients them to the concept of learning plans and to the district's performance objectives for work-based learning. Mentors then work with the student and the placement specialist to determine how specific job tasks will help the student move toward the performance objectives. The process also allows for enriching the job experience with new tasks, exposures to other work areas, and specific projects. Mary Jane Clancy considers the mentors and the learning plans essential to transforming a student job into a learning experience: "You can do all kinds of other quality things, but these two elements—trained mentoring and learning plans—are really the essentials that we'll just not compromise on."

The Scale of Work-Based Learning

For 1996-97, the latest years for which data are available, this team of employer- and student-supporting staff placed over 2,230 students in paid, one- or two-day per week work-based learning experiences.[20] This included 1,727 juniors and seniors and 503 other students. The juniors and seniors comprised 31.4 percent of the junior/senior population in the 60 Small Learning Communities that had school-to-career at the time.[21] Clancy and her staff are confident they will achieve the superintendent's goal of 3,500 such internships by the end of the 1997-98 school year.

These school-to-career jobs were provided by 305 employers, about three-fourths of which were private, for-profit firms; the remainder were academic, government, and health care employers. Of these 305 employers, 72 had over 500 employees; 116 had 49 or fewer employees. These figures do not necessarily include all the 200-plus employers serving on academy boards or providing after-school or summer jobs to academy juniors and seniors. Some employers work with both the academies and the Office of Education for Employment.

The district does not expect *all* juniors and seniors to have one-day and two-day paid work-based learning, learning plans, and trained mentors. Instead, the five-year goal is 10,000 paid internships, encompassing roughly half of the district's juniors and seniors. One reason for the limit is the substantial preparation and screening that paid work experiences require. The district is adamant that preparation and screening are essential to ensure that employers have good experiences with students. "It is imperative that the first experiences of employers on this be good ones if we want them to stay involved and get more involved," says CoreStates' O'Rourke.

The district makes an array of other real-world engagements available to juniors and seniors who are not eligible or selected for paid work-based learning. These include job shadows, unpaid internships, service learning, special projects, and school-based enterprises. (Some of these are also available to high school freshmen and sophomores and middle school students.) District personnel maintain that the volume of these "other" work-based learning slots exceeds that of paid ones, although the statistics are not readily available, in part because outside agencies provide some of the opportunities. Among these latter experiences are 6,265 service-learning opportunities for students in 1996-97 and three specialized outside programs coordinated by One-To-One and the district:

- ***A City-Wide Job Shadowing Day.*** Held annually, this program provided workplace job shadows for 1,800 ninth graders in 1995; in 1996 2,000 students participated. The goal for the fall of 1997 is 2,400 students.
- ***Take Our Daughters to Work Day.*** While encouraging employers to allow employees to participate in this national event, One-To-One and the Chamber also urge employers to "adopt" ninth- and tenth-grade girls who do not have employed parents. Seven hundred such girls participated in the spring of 1997; the goal for spring 1998 is 1,000.
- ***The BEGIN program—Business Education Goes Into Neighborhoods.*** In this mentoring-shadowing-internship program, tenth-graders spend two hours per week in workplaces, mainly smaller businesses near high schools. In the spring of 1997, 120 students participated, up from 35 three years earlier. The district and One-To-One have set a goal of 200 experiences with 80 employers for 1998. Leadership Council and district personnel see BEGIN as a way to involve smaller employers in the first steps of providing work-based learning experiences.

EMPLOYER REACTIONS TO WORK-BASED LEARNING

Employers interviewed for this study initially offered work-based learning opportunities to students based on a mix of perceived interests, personal and corporate.[22] Once involved, they found the process less burdensome than anticipated and the students more congenial and enjoyable. And as the experience matured, employers began to reap benefits, the most important of which was low-cost production. No employer has reacted negatively to the experience; all plan to continue or expand their involvement.[23]

Reasons for Engagement

Employers offered a number of rationales for their initial decision to support the Children Achieving reform effort and to offer work-based learning experiences to students.

Regional economic development. CEOs and other top managers took this broad view. They saw school reform as necessary if the region were to develop an effective work force that would attract and hold quality employers. Rosemarie Greco's opinion was shared to varying degrees by others:

> This is not just charity and helping needy kids. This is economic development and the need of employers for competent employees. . . . We can't just wall up the inner city and let it go. These people are our customers and our work force. We are obligated to each other—we as a company and they as customers and workers. I view my obligation to make the schools work and these communities viable as equal to my obligation to my shareholders.

A vice president of human resources agreed: "We can't afford to let kids get productive at the age of 27 and waste the time in-between. These kids can be productive at 19. To do that, we must make the schools work and help kids understand the concept of work."

Combating racism and advancing affirmative action. Several employers cited either or both aspects of this dual purpose. "You can't sit in the middle of one of the biggest cities in the country with a poor minority population and not do something like this," said a vice president for human resources. "I'm absolutely convinced, philosophically, that we must do this sort of thing if we are going to combat discrimination." A personnel officer stated a similar issue in pragmatic terms: "We got involved because we figured we'd get some hires out of this that would help meet our diversity and affirmative action goals."

Pre-screening potential permanent job applicants. A number of employers spoke of this benefit of work-based learning. Said one employer, "We'll know them much better than the person walking in off the street." Another was "looking for potential scientists and engineers and managers. We'll support them as high school students, give them co-ops as college students, and hope they hire on with us after graduating from college."

Supporting youth and the community. Many employers spoke of the need to "turn kids from users of government money into taxpayers." Some had a decades-long tradition of hiring youth or helping the schools and the community. One said, "Hiring kids is just one of the special hiring programs we have—for kids, for senior citizens, for the disabled, for college students and so on."

Personal reasons. A surprising number of employer representatives from firms of all sizes used variants of the same phrase: a chance to "give back." One employer supported school-to-career efforts because "I went to school in this neighborhood, and I want to help." Another said, "My involvement might have something to do with the fact I was a teacher once." A third employer reported, "I had a mentor once and it feels good."

Students in the Workplace

In almost all cases, employers assigned students to work in entry-level jobs or as assistants to professionals. For instance, two students were "junior legal assistants." Some were nurses' aides, performing such tasks as taking vital signs. One student functioned part of her time as a clerk on the floor of the Philadelphia stock exchange. Some students did telemarketing—"I never thought I could make that kind of call!" said one—while others helped engineers. In office settings, students frequently did clerical or assistant tasks: typing, filing, answering phones, stuffing envelopes, running errands.

Students received the minimum wage or a little more, up to about seven dollars per hour. Public job training or other funds subsidized only a few wages; most employers paid the students out of regular operating budgets, often on a regular line item for temporary help.

Most employers did not treat students as "just workers," although students commonly took the usual employer tests, attended the usual training sessions, and did the usual work. Most employers seemed conscious—perhaps because of the mentor training and learning plans—that this represented "more than just a job," as one said. That awareness led employers to give students a broader exposure to organizational operations and special opportunities to tag along on trips and attend meetings, routine conferences with mentors, regular performance discussions, and special assemblies.

Employers reported that most students were well prepared and well screened. They were generally impressed—and surprised—by the quality of student portfolios, interview skills, and on-the-job skills: "Some of these kids type better than adult applicants off the street." "They soaked up things like a sponge." "They came in even on holiday because they knew we needed them."

Employers also cited problems but felt these rarely occurred and were minor: One supervisor noted: "The typical teenage stuff—lack of experience, being tongue-tied, low self-confidence and self-esteem—but you should see how she bloomed over two years here!" When a serious problem arose, it was usually worked out in consultation between the employer and the placement specialist or the student's high school support personnel. Employers reported that they rarely had to release a student from a job.

Costs, Benefits, Outcomes, and Future Employer Participation

Most employers were aware of both the costs and the benefits of providing work-based learning but maintained they were not tallying these up precisely, nor were they deciding their involvement in terms of return on investment.

Employers cited two major costs of providing work-based learning opportunities. One was the direct cost of student wages. These generally ranged from $1,500 to a little over $3,000 per student for the school year 1996-97.[24] The second was for the time of mentors, supervisors, and coordinators. This mounts up for employers with several dozen students, and programs with large numbers of students generally require an internal staff member to coordinate them. "This is taking 75 percent of her time," one vice president said of his program coordinator. He had not expected such demands but accepted them as necessary to a quality program. Indeed, he was increasing the number of work-based learning opportunities his organization offered.[25]

Employers cited numerous benefits that they felt justified the costs. The main benefit, as one employer said, is that "the students *are* productive; they *earn* their wages." Students represented low-cost workers for a number of employers, who valued that. At the extreme, a hospital with outside funds subsidizing student wages got free labor.

Few employers said that students displaced regular workers, although some admitted they would have to hire a regular worker if they

didn't have the students. "If I didn't hire the students," said one interviewee, "we'd be requiring a lot more overtime from regular staff or using a lot more temporary agency people, both of which cost much more than the students. . . . In those terms alone, it's worth it." Then he added, "Besides, it's fun."

A number of employers cited the benefit of reduced recruiting costs. While school-to-career is too new for employers to have hired many of its graduates permanently, some employers cited hires from the pool of work-based learning students. One employer termed the question a "no-brainer:"

> Look, say I spend two grand on a student. First of all he gives me good work for the money. But also, say I hire him when he graduates because I know him and value his work and his potential. And he sticks with us and makes a career with us. On the other hand, it costs me that same two grand to recruit the typical entry-level worker from the street. And a lot of them don't make it with us or turn over on their own.

Another employer said:

> It costs a total of $148,200 for the 51 students we have here from January to June, and we pay that from our per diem budget. That hasn't been challenged yet by anyone, but I can tell you my boss and I would defend it on the necessity of coverage and the low-wage costs of students to provide that coverage—as well as the good hiring potential they represent.

Employers frequently cited less tangible benefits, too: the "joy of giving" to young people, seeing them bloom, helping them with personal problems, helping them make choices for their futures. A number of employers also said that mentors and supervisors had improved their interpersonal and leadership skills through working with students and that the kids generally helped morale. One employer said that the experience of mentoring students was so positive that the firm was now using mentoring for all new hires.

Employers also cited the traditional community and public relations benefits of helping schools and young people. Numerous employers echoed this comment of a vice president for human resources:

> We're in our fourth year and we're beginning to see payoffs. The kids respond, they feel valued, develop self-esteem, they can see a future, they know they can become something. They develop job readiness skills, and the older ones become positive role models to the younger ones. We've seen 98 percent graduate and 95 percent go on to college—and we've hired a few permanently.

All the employers interviewed said they would continue bringing students into the workplace. According to district officials, none of the over 300 employers who have offered paid work-based opportunities have dropped out based on dissatisfaction with the program, although a few have left it for financial, labor relations, or other unrelated problems. One employer who had dropped out said she hoped to return after her company resolved some unrelated labor relations problems. Another, a major hospital, suffered 200 layoffs of regular staff in the fall of 1997—but kept offering a constant number of work-based learning positions to the district.

Most employers interviewed thought they could—and would—take more students in the future; only a few said they had reached their capacity. On the other hand, all employers said there were limits to the number of students they could take, due to budgetary constraints and limits to suitable work. Some said it might be possible to double the number of students but going further would require another coordinator; they doubted they could justify doing that.

This suggests that, for a while longer, the district and the Leadership Council can continue "filling up" the employer roster by recruiting more large firms. However, attaining the district's goals for work-based learning will

soon require recruiting and supporting the much larger number of medium-sized and small employers.

THE PROGNOSIS FOR REFORM

School-to-career, with its dependence on extensive and high-quality employer involvement, is a core element of the district's Children Achieving reform agenda. To date, there has been little opposition to the *goals* of school-to-career. According to Mary Jane Clancy, "There are issues around the overall reform agenda—personality conflicts, communication issues, budget crises and so on but not about school-to-career as such. Business is supportive and the teachers union is supportive and, internally, more and more people are coming on board."

In the third year of expanding school-to-career as part of Children Achieving, the scale and variety of work-based learning experiences are impressive, particularly for a massive school district with a reputation for resistance to change. Moreover, the uniformly positive response of employers to their experience with work-based learning is especially encouraging given common stereotypes of employers, schools, and inner-city students, including those they hold about one another.

However, friends and allies do raise issues and concerns about the pace and quality—and even the feasibility—of implementing the school system's reform agenda. These issues have relevance for others that seek to learn from and emulate the breadth and depth of Philadelphia's reform vision, even in school districts that are far smaller.

Is the projected number of deeply committed employers feasible? It is not yet clear whether Philadelphia can recruit Senior Partners for all 22 clusters. CoreStates led the way by committing to the Kensington Cluster in the 1996-97 school year, and major employers have been recruited as Senior Partners for four more clusters, with two more awaiting formal approval. Signing up 15 other major employers, and preparing and supporting all who do to play their new roles effectively, will require intensive effort by the Leadership Council.

Will teachers support the reform agenda? CoreStates' Greco seems more worried about teacher support than the challenge of enlisting major employers: "The main failure factor is whether we can get the hearts and minds of the teacher community. I worry about that. They feel left out and blamed and not valued."

In fact, the Philadelphia Federation of Teachers complains long and hard that teachers are blamed for the system's failures. "We have problems with Hornbeck," a union spokesperson said. But, he added, "We do support school-to-career wholeheartedly. We have a bunch of student interns here at union headquarters, as do other city AFL-CIO unions." And he pointed out that, by law, "All our members reside in the city. Our kids go to these schools. We want this to succeed."

Will teachers receive the supports they need for the reforms to succeed? This is a major concern of the teachers union:

> We don't really have enough supports for teachers. School-to-career in the high school and at the junior/senior level is good, but you really need to start lower down, do more in the middle school, which is where the dropouts occur or begin. Our people there are saying they want to get into this, to prepare kids and help them look forward to what they'll get when they get to high school. But there is no staff development or curriculum change to speak of at the middle school level, and we have to have that.

"Teachers need staff development because most of them have never been in an office tower or a factory," the union spokesperson continued. "They've never applied for any other kind of job, never had interviews or had to fill out applications and so on for anything other than being a teacher."

Is the pace of change too fast? A Children Achieving Challenge staff member worried that

the speed of implementation could jeopardize quality:

> The real issue is the overall quality of the effort, particularly the quality of the work-based learning experiences. School-to-career is the centerpiece of K-16 reform, but we need to make sure that it infuses the entire system. . . . We would just as soon slow down the numbers push and assure that these experiences are of a high quality.

The Potential for Systemic Change

Even some of its advocates express another concern and say that it might be better if Children Achieving would take "a narrower focus and make something visible happen sooner." But Clancy and Jones say that action on a broad front is exactly what Philadelphia schools need. "You cannot have real change without having the culture, the structures, the responsibilities, and so on change," says Jones. "We need to change a whole system—just like Motorola and other leading business organizations have transformed themselves into high performance organizations. They changed everything from the top to the bottom of the organization."

Indeed, it is instructive to look at Philadelphia as an example of systemic change, analogous to transforming a business into a "high performance organization." While the Philadelphia School District is far from that ideal, it has begun to incorporate many requisite ingredients for transformation, especially on the school-to-career front: an inspiring vision, strong and committed leaders, the engagement of the major stakeholders, and a focus on quality, standards, and results.

Moreover, Clancy and Jones see indicators that key elements of the system are swinging into line with the school-to-career agenda:

- The most recent examination for new principals required a deep knowledge of school-to-career and its implications for education reform. This, says Jones, "means that the principals are now on board with school-to-career, and school-to-career is into the guts of the system, accepted as real, inevitable, and desired by leaders."
- The city's elite Magnet Schools had stayed aloof from school-to-career, but in 1996 two of them piloted it for 30 students each. For 1997-98, three Magnets have adopted school-to-career for its students and two others are exploring it.
- Key teachers now support reform along school-to-career lines. "We already have the science and the arts faculties, for whom applied learning is a natural," Jones explains. "But now the rest of the core academic faculty is getting involved, especially in the Small Learning Communities that are into school-to-career. They are using real-world examples, adjusting teaching strategies, using team teaching, project-based learning, attending school-to-career in-service training."

"We are, in fact, making systemic progress," Jones says, "and old habits and attitudes are slowly falling away. Some people in the system may be kicking and screaming but they are coming along."[26]

Still, it is too early to assess the outcomes of school-to-career or the overall Children Achieving reform in terms of school improvement as measured by rates of student completion, grades, test scores, or the postgraduate educational or labor-market experience.[27] Indeed, to many parents, the press, and some at City Hall and the State House, Children Achieving has yet to achieve much beyond headlines, as Superintendent Hornbeck fights with the teachers union and politicians at various levels to advance his agenda.

The fundamental challenge for Philadelphia's systemic reform strategy is whether the city can muster the time, tolerance, and sustained support needed to implement the process in all aspects of the school system. Fifteen clusters and 84 Small Learning Communities are committed to school-to-career, but many still lack the levels of training and sup-

port needed to change curricula and pedagogy. These changes are harder and take longer to accomplish than the relatively simple process of putting 2,230 students into paid work-based learning slots. Expanding to 15 clusters with school-to-career in September 1997 (up from four the preceding year) has made the burden and necessity of internal supports even greater. And Jones know that staff development is essential: "This is a scale issue and it's expensive in time and money," she says. "It will take three more years to train and support everyone."

Similarly, the pace of creating School Councils depends on the ability to train and support their members. It will take a year before all comprehensive high schools have such bodies. And it will take time to recruit major employers to head all 22 Cluster Resource Boards, let alone set up and support those bodies.

Will the larger systems in which the district is embedded have the tolerance and perseverance to support this long-term process? Mayor Rendell—a strong supporter of Children Achieving, Superintendent Hornbeck, and school-to-career—cannot run again. Hornbeck himself is widely held responsible for the failures of the system he is trying to transform. At the state level, there are calls in the legislature to break up the system or turn to vouchers, while Philadelphia's chronic budget crisis threatens to undermine the flow of resources needed to complete the transformation. Moreover, both the Annenberg Challenge grant for Children Achieving and federal School-to-Work money run out at the end of the decade.

Clancy and Jones recognize these issues. "It takes a generation to make these kinds of changes in a system this large," Jones said. "The issue is . . . whether the system, the public, the politicians can be tolerant enough, have patience enough. We don't think that the new standards are going to go away, or the changes in curricula and instructional approaches, or school-to-career either. We're far enough down the road on these."

To Jones, the key to maintaining public support is visible achievement. "We just have to work fast enough to make some measurable and visible improvements in some pieces of the system and show some results, some outcomes, some progress." She cites such data as the district has at this point from its the school-to-career efforts. While these improvements reflect in part the special preparation and screening of students for paid work-based learning experiences, district officials maintain that such data, along with anecdotal evidence from teachers and employers and student "before-and-after" comparisons, are persuasive indicators of the power of school-to-career and work-based learning to engage students and improve their performance. For example in 1996-97:[28]

- The school attendance rate for juniors and seniors in work-based learning was 87.5 percent, compared with 78.8 percent district-wide.
- The dropout/withdrawal rate for juniors and seniors in work-based learning was 3.3 percent, compared with 11.5 percent district-wide. (While the vast bulk of dropouts occur in the ninth and tenth grades, this reduction for juniors and seniors is still significant.)
- The graduation rate for seniors in work-based learning was 93.6 percent compared with 86.0 percent district-wide.
- Paid work-based learning students had higher grade-point averages (GPAs) than did students district-wide: 29.2 percent of work-based learning students had GPAs of 3.0 or above, compared with 19.8 percent district-wide. At the opposite end, 14.4 percent of work-based learning students received GPAs below 1.00; the figure was 33.3 percent district-wide.

The evidence is not definitive. It has yet to reflect the general improvements in overall indices of school performance, post-secondary performance, and labor market outcomes that

parents, business, and other stakeholders in the system rightly seek. And that is the dilemma both for Philadelphia, as for other districts that contemplate undertaking a similarly ambitious agenda. The jury is out on whether Philadelphia's promising reforms will elevate long-term educational and labor market outcomes, yet these depend heavily on whether the larger powers that control the school system will allow, indeed enable, the consummation of its transformation.

INTERVIEWS

Douglas Allen, Vice President, Human Resources, and Barbara Liccio, Human Resources Manager, Director, Health Tech 2000 Program, St. Christopher's Hospital for Children

Rebecca Battaglia, Assistant Vice President, and Leonard Wright, CoreStates Bank

Cindy Cammorato, Human Resources Manager, Philadelphia School District

Mary Jane Clancy, Executive Director, Education for Employment Office

Sheila Dill, Senior Human Resources Officer, PNC Bank

Frank Garvey, TFM Investments

Rosemarie B. Greco, former President, CoreStates Financial Corporation, Chair, School-to-Career Leadership Council

Robert Horn, Principal, All-State Legal

Patricia Irving, President, Private Industry Council

Dr. Cassandra Jones, Director, School-to-Career, Education for Employment Office

William J. Kaschaub, Vice President, Human Resources, and Wayne Gardner, Project Director, Creating Paths for the Future, PECO Energy Company; and several other PECO staff

Richard Moses, Chief of Staff, and Stephanie Smith, Director of Program Services, Philadelphia High School Academies, Inc.

Karen Nickens, Teacher, Philadelphia School District, stationed at the Medical Center

Martin Nock, Executive Director, Communities in Schools of Philadelphia

Thomas O'Rourke, Senior Vice President, CoreStates Bank, Chair, Kensington Resource Board

Meryle S. Ostroff, Vice President, External Relations, Episcopal Hospital

Vicki Phillips, Executive Director, and Carina Wong, Program Director; Children Achieving Challenge, Greater Philadelphia First

Josephine Robles, Quality Improvement Manager, Materials Management, University of Pennsylvania Medical Center

Janet Ryder, Assistant to the President, Philadelphia Federation of Teachers

Pat Smith-Green, Manager, Workforce Council, Greater Philadelphia Chamber of Commerce

Mary Strasser, Executive Director, One-To-One, Philadelphia

Terry Weaver, Associate Recruitment Administrator, Smith-Kline Beecham

H. Lawrence Wilson, Chairman, Rohm and Hass Co.; Co-Chair, School-to-Career Leadership Council; Chair, Philadelphia High School Academies, Inc.

ENDNOTES

OVERVIEW

1. For each study, a team member visited the community for several days, collected documents, and conducted interviews. A meeting of stakeholders in the community reviewed a draft of each case study before the final revisions and the assembly of all four cases into this volume.

2. As this decade has progressed, the term "school-to-career" has largely supplanted "school-to-work," mainly because the older term connotes narrow, specific, rapidly outdated skill training as found in traditional vocational education. The school-to-career movement stresses broad preparation for careers, including the option of postsecondary training. While the federal legislation uses the older term, we use the newer term in this volume.

3. Institute for Research on Education, *Bringing School-to-Work to Scale: What Employers Report.* Philadelphia, PA: IRHE, 1997.

4. Committee for Economic Development. *The Employer's Role in Linking School and Work.* New York, NY: CED, 1998.

5. Boston Private Industry Council. *School-to-Career Program Demonstrates Significant Impact on Young People.* Boston: BPIC, 1998.

6. Robert Crain, A. Allen, and R. Thaler, eds. *The Effects of Magnet Education on High Schools and their Graduates* (draft version, MDS-779). Berkeley, CA: National Center for Research in Vocational Education, 1998.

7. Ken Jones and Betty Lou Whitford. "Kentucky's Conflicting Reform Principles: High Stakes School Accountability and Student Performance Assessment. *Phi Delta Kappan.* December 1997. pp. 276-281.

BOSTON

1. Data sources include the Boston PIC, the BPS Office of Information Services, and *Boston's Economy 1996* (Washington, D.C.): U.S. Department of Labor, Bureau of Labor Statistics.

2. The first two iterations of the Boston Compact also encouraged and/or solidified "traditional" school-business partnerships. Some of these, such as NYNEX with Dorchester High, have lasted over two decades and focus on supplying tutors or donating equipment. Individual employers have also helped schools develop district-mandated comprehensive reform plans, and employer representatives often serve on the school-site council.

3. Current ProTech health care employers are Beth Israel/Deaconess Medical Center (CareGroup), Boston Medical Center, Dana Farber Cancer Institute, Genzyme, New England Baptist Hospital, New England Medical Center, Occupational Health and Rehabilitation, Partners HealthCare Systems (formerly Brigham and Women's, Massachusetts General, and Spaulding Rehabilitation hospitals), and St. Elizabeth's Medical Center.

4. These figures are slight underestimates because they exclude students in school-to-career efforts that are not in a district-designated school-to-career school.

FORT WORTH

1. Sources for this section include the U.S. Bureau of Labor Statistics, the Fort Worth Chamber of Commerce, and the Texas Workforce Commission.

2. The metropolitan area (the Fort Worth-Arlington metropolitan statistical area) encompasses Hood, Johnson, Parker, and Tarrant counties. The larger Dallas-Fort Worth area is called the Metroplex.

3. Michael Kane, Edward Fiske, Carol Copple, and Jon Cohen, *Developing Schools That Work: Fort Worth Project C³: Community, Corporations, Classrooms* (Washington, D.C.: Pelavin Associates, January 1992), pp. 3, 4.

4. Battelle Institute, *An Assessment of the Resources and Comparative Advantages of the Fort Worth Area and the Identification of Target Industries* (Columbus, Ohio: Battelle Institute, October, 1989).

5. Soon thereafter, Packer became director of the Secretary's Commission on Achieving Necessary Skills, commonly known as the SCANS Commission. This blue-ribbon group, representing business, labor, education, and government, issued the landmark 1991 study *What Work Requires of Schools.* In that document, the commission specified a set of skills and competencies that modern workplaces demand from all workers. The SCANS report has become a widely accepted benchmark for employer expectations of its entry-level work force.

6. Battelle Institute, *An Assessment of the Resources and Comparative Advantages of the Fort Worth Area and the Identification of Target Industries.*

7. Some have questioned amount of staff time devoted to the surveys. Having completed two survey rounds, the FWISD research staff believes they can make the process more efficient (e.g., by using survey forms designed to be computerscanned). Staff at the chamber and school district believe it is important to conduct the job analysis periodically to validate the information.

8. Kane, Fiske, Copple, and Cohen, *Developing Schools That Work: Fort Worth Project C³: Community, Corporations, Classrooms,* p. viii.

9. *Evaluating Results: Community-to-Community Impact* (Fort Worth, Tex., J.C. Penney Leadership Institute on School Improvement, November 1997), pp. 32, 33.

10. Fort Worth Independent School District, Department of Standards and Applied Learning, *Applied Learning: A Collection of Project Plans, K-12*, vol. 1 and 2 (Fort Worth, Tex.: FWISD, 1996).

11. Each year, the Texas Education Agency rates schools based largely on the percentage of students that "pass" this statewide standardized test in reading, mathematics, and writing.

12. Fort Worth Independent School District, "TAAS Report for Alice Carlson Learning Center" and "TAAS Report for Bluebonnet Applied Learning Academy" (Fort Worth, photocopy, 1997). Although these results are encouraging, test scores alone do not allow for definitive conclusions because of possible selection bias (i.e., students and their families choose to attend the applied learning centers).

13. Kane, Fiske, Copple, and Cohen. *Developing Schools That Work: Fort Worth Project C³: Community, Corporations, Classrooms*, p. 24.

14. National Center on Education and the Economy and the University of Pittsburgh, *New Standards Performance Standards: Elementary School*, vol. 1; *Middle School*, vol. 2; *High School*, vol. 3 (Washington, D.C.: National Center on Education and the Economy, 1997).

15."Vital Link Guidelines for Employees" (handout, n. d.).

16. Velma Hythecker, *Vital Link* (Fort Worth, Tex.: FWISD, 1996).

17. The same office arranges and manages various customized or special-purpose work-site internships, such as a series of workplace visits for elementary school students and Vital Link internships that place recently arrived immigrants from Mexico with Spanish-speaking workplace mentors.

18. Recently, the FWISD organized a countywide consortium of all school districts in Tarrant County to apply for state grant STW implementation funding through the Fort Worth Workforce Development Board. The application is pending.

19. Fort Worth Independent School District, *Youth Fair Chance/School-to-Work Quarterly Report to the Fort Worth Private Industry Council.* Third Quarter 1994 (Fort Worth, Tex.: FWISD, 1994), p. 1.

20. Fort Worth Independent School District, *Youth Fair Chance/School-to-Work Quarterly Report to the Fort Worth Private Industry Council.* Third Quarter 1994 (Fort Worth, Tex.: FWISD, 1994), p. 6.

21. Fort Worth Independent School District, "*A NewVision for Career and Technology Education*" (Fort Worth, Tex.: FWISD, July 16, 1996).

22. Fort Worth Independent School District. "High School to Careers and Post-Secondary Education" (Draft, December 19, 1997). Fort Worth.

23. Fort Worth Independent School District, "High School to Careers and Post-Secondary Education," (draft, Fort Worth, Tex., December 19, 1997).

24. Fort Worth Independent School District, "High School to Careers and Post-Secondary Education." A recent state-level initiative has established graduation requirements at three levels. The third and lowest level is minimum graduation requirements. Next are requirements for a diploma at the recommended level, including 24 high school credit hours of a college preparatory curriculum. Highest is the diploma at the distinguished level, which requires completion of extra assignments.

25. Fort Worth Independent School District, "High School to Careers and Post-Secondary Education."

26. Kane, Fiske, Copple, and Cohen. *Developing Schools That Work: Fort Worth Project C3: Community, Corporations, Classrooms*, p. vi.

27. Fort Worth Chamber of Commerce, *Action Plan 1997-98* (Fort Worth: Fort Worth Chamber of Commerce, 1997).

28. Assistance to students with transition into jobs and further learning after high school graduation is also part of the Fort Worth vision. Toward this end, the district has established a central Graduate Placement Center. It offers a resource to in-school counselors, career counseling presentations in schools, interest and aptitude testing and career counseling for individual students, and job placement assistance for graduates and FWISD alumni. According to Steffen Palko, the FWISD's Graduate Placement Center has a reputation among Fort Worth employers as a better source of job applicants than the Texas Workforce Commission.

29. Fort Worth Independent School District, *Five Year Strategic Plan* (Fort Worth, Tex.: FWISD, June 6, 1997), p. 8.

LOUISVILLE

1. "The Local Regime and Economic Development," *Economic Development Quarterly*, vol. 4, no. 2 (May 1990), p. 102.

2. Interview with Michael Timpane. Unless otherwise noted, quotations are from interviews conducted for this case study; a list of interviewees appears at the end of the case study.

3. "Kentucky's Class Act," *Business Week*, 7 April 1997, pp. 90, 91.

4. H.B. 940 SS 2(6) & 3, 1990.

5. Kerry A. White. "Kentucky Test Scores Up as KIRIS Criticism Lingers," *Education Week*, 10 December 1997.

6. "Kentucky's Class Act," pp. 90, 91.

7. Chancey became president of the Liberty Bank in 1990. In 1995, he became chief executive officer and president of Bank One Kentucky, which purchased Liberty in 1994. He retired at the end of 1996.

8. The term *Kentuckiana* connotes an area that embraces several counties in southern Indiana as well as Jefferson County and the counties surrounding it in Kentucky.

9. Academy for Educational Development, *School-to-Work Transition and Its Role in the Systemic Reform of Education: The Experience of Jefferson County, Kentucky, and the Kentucky Education Reform Act* (Washington, D.C.: Academy for Educational Development, n.d.).

10. In 1993, a vehicle was formed for greater collaboration among postsecondary institutions. The Greater Louisville/Southern Indiana Postsecondary Transition Consortium was created to help improve the transition to postsecondary learning in public and private colleges and universities and to try to rationalize precollege curriculum requirements among the region's different institutions.

11. Growth Strategies Organization, *Economic Development Strategy for the Greater Louisville Region* Vail, CO: GSO, 1996. p. iii.

12. Ibid., pp. iii-v, 13-15.

13. Among the council's founding members from local business are Malcolm Chancey, Douglas Cobb, and representatives from PNC Bank, UPS, and several other firms. Government and public and private school representatives on the council include, among others, the mayor, Superintendent Daeschner, and the secretary of the state's Workforce Development Cabinet. Other members include representatives from the Louisville Urban League and Metro United Way, the Greater Louisville Economic Development Partnership, and the Greater Louisville Central Labor Council.

14. For more on the Boston Compact, see the Boston case study in this volume. Dr. Minnis is now director of JCPS's Career/Workforce Development Administration, and Dr. Kyle is still working as a consultant to the Gheens Foundation, which provided essential seed funding for school reform in Louisville.

15. *Executive Summary, The Louisville Education and Employment Partnership Graduate Research Project* (Louisville, Ky.: Jefferson County Public Schools, 1995).

16. In 1997, Providian became part of AEGON.

17. *Application for School to Work Opportunities Act Development Grant*, Jefferson County Public Schools. November, 1993, p. 3.

18. The program recently added an associate's degree component through Vincennes University.

19. "Connecting the Future to the Work of Schools," *Changing Schools in Louisville* vol. 1, no. 1 (Winter 1996-97):13.

PHILADELPHIA

1. Greater Philadelphia First, *An Economic Development Strategy for the Greater Philadelphia Region*, Philadelphia, Pa.: Greater Philadelphia First, 1995).

2. Pennsylvania Economy League, *Building A World-Class Technical Workforce: The Key to a Competitive Greater Philadelphia*, report no. 686 (Philadelphia, Pa.: Pennsylvania Economy League, October 1996), pp. ii and 8.

3. *New York Times*, April 1997.

4. For more information on KERA, see the case study of the Louisville/Jefferson County schools in this volume.

5. *School to Career: Strategies for Building a Quality Workforce—Senior Partner Resource Manual* (Philadelphia, PA.,: Greater Philadelphia First and the School District of Philadelphia, 1997).

6. This restructuring into Small Learning Communities predates Children Achieving but dovetails with its goals. The SLCs include the existing academies and certain other preexisting initiatives for target populations, as well as new SLCs created around broad career themes adapted from five sectors for economic development targeted by Greater Philadelphia First. The four Area Vocational Technical High Schools are structured into smaller units akin to SLCs.

7. Three of the eight relatively independent magnet high schools have adopted school-to-career; two are considering doing so.

8. Some internships are unpaid in the eleventh grade, but most are paid.

9. *School to Career: Strategies for Building a Quality Workforce: Senior Partner Resource Manual.*

10. In the fall of 1997, Greco announced her resignation as president of CoreStates, effective at the end of January 1998. Soon thereafter, CoreStates announced a merger with First Union Bank of Charlotte, North Carolina, continuing Philadelphia's losses of corporate headquarters. However, Greco has continued her role on the Leadership Council, and CoreStates says that the merger will not affect the level or intensity of its support for Children Achieving.

11. Other founding members include a CoreStates vice president, the chief executive officers of Independence Blue Cross, Bell Atlantic, the Philadelphia Stock Exchange, St. Christopher's Hospital for Children, Tasty Baking Company, the Philadelphia Eagles, and a few smaller firms. Educational and community leaders on the council include Superintendent Hornbeck, some of his key school-to-career staff, two school board members, staff of the Children Achieving Challenge, the vice president of the University of Pennsylvania, the city's deputy mayor and commerce director, and the presidents of the Home and School Council, the High School Academies, the Community College of Philadelphia, the Philadelphia Federation of Teachers, the Private Industry Council, the

Chamber of Commerce, and the Philadelphia AFL-CIO, as well as certain consultant advisers.

12. *School to Career: Strategies for Building a Quality Workforce—Senior Partner Resource Manual.*

13. O'Rourke chairs a federally funded empowerment zone that overlaps Kensington.

14. According to O'Rourke, "Part of that is CoreStates' taking on 20 work-based-learning juniors and seniors last school year. We'll probably grow that to 30 or so over time. Also, between us and others on the board, we've put 26 mentors not connected with work-based learning into the school along with 80 tutors." Other Kensington Resource Board activities include placing 60 juniors and seniors in paid internships with seven employers, completing a mentor training session, mounting an attendance initiative with incentives for better attendance, working with teachers to develop a job-readiness curriculum, and surveying the effectiveness of Kensington-area community organizations and schools.

15. The STC Leadership Council membership is comprised mainly of chief executive officers. It is charged with policy and guidance. The stakeholder groups tend to be composed of vice presidents for human resources and other senior managers chosen to reflect the needs and mobilize the involvement of their companies and sectors.

16. O'Rourke insisted on the title of "business relationship manager" instead of the "job developer" title initially assumed by staff of the Office of Education for Employment. O'Rourke felt that "job developer" smacked too much of poverty-program, entry-level job placements and failed to imply the educational and business partnership orientation.

17. The Philadelphia Private Industry Council, which oversees the city's federal job training programs, pays for these new positions.

18. SLC coordinators receive copies of these evaluations, which suggest when students need more preparation. As another element in this process, program coordinators from the Private Industry Council determine the eligibility of students for wage subsidies to support work-based learning. These coordinators are stationed at the Office of Education for Employment.

19. Philadelphia's crosscutting skill standards include basic employability skills, professionalism, teamwork, computer literacy, work place safety, communicating, understanding systems, planning and organizing resources, effectively applying technologies, and understanding quality, legal, and ethical factors. They build on the recommendations of The Secretary's Commission on Achieving Necessary Skills. U.S. Department of Labor, *What Work Requires of Schools. A SCANS Report for America 2000* (Washington, D.C.: U.S. Department of Labor, 1991).

20. This includes 70 academy students. If employers are willing, the academies add this model of work-based learning to after-school and summer jobs. Whenever possible, too, the academies adopt the mentor and learning-plan features of the school-to-career model for all student job situations.

21. Districtwide data from the spring 1997 term give a total of 63,116 students in grades 9 to 12 in all the high schools in the system. Of these, 48,947 were in grades 9 to 12 in comprehensive high schools. There were a total of 22,477 juniors and seniors in all the various high schools; of these 11,822 were in the 133 Small Learning Communities in comprehensive high schools; 5,497 were in the 60 Small Learning Communities that then had mounted school-to-career programs. The 1,621 juniors and seniors in paid work-based learning when these data were collected included a few from magnet schools that were just beginning school-to-career. As noted, by the end of the school year, the number of juniors and seniors in paid internships had increased to 1,727; and by the opening of the 1997-98 school year, the number of SLCs that had mounted school-to-career programs had increased to 84.

22. This case study included 22 interviews, some with two to five people present. Sixteen interviews were with employer associations or with employers who were offering work-based learning opportunities to students. The number of students hired by each employer varied from 1 to 72; most of the larger companies employed between 15 and 30 students.

23. Employers interviewed universally felt that wage subsidies or tax credits were neither necessary nor an important factor in their decisions. Most did feel that subsidies would weigh more heavily in the decisions of smaller employers and that the red tape involved would have to be minimal.

24. These figures will be somewhat higher in 1997-98, reflecting the 1996 rise in the minimum wage.

25. The employer, a large hospital, provides 25 juniors and seniors with paid work-based learning experiences and 10 tenth graders with job shadows. It also hires 80 young people for summer jobs each year, and 100 ninth graders visit for career-awareness explorations.

26. The engagement with business yields side benefits for the school system as private managers rub elbows with school people and managerial skills rub off. For example, Jones credits CoreStates vice president O'Rourke with enhancing the district's, and her own, management skills: "He has really driven us to improve our management, and we have learned a lot from him. We've all become better managers. . . . He's always pushing us—set accountability, plan thoroughly, stop using those passive verbs and use action verbs, keep it short. . . . The other school people we deal with are already saying, 'Why does your office talk like that and write like and plan like that?'"

27. There is some improvement in recent Stanford-9 Achievement Test scores, but levels remain well below national norms.

28. For each of these statistics, the actual comparative gaps are wider than indicated because the districtwide totals include the work-based learning students. The statistics are for the 1996-97 school year.

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Jobs for the Future (JFF) is a national nonprofit organization that conducts research, provides technical assistance, and advances policy. JFF's goal is to enhance economic security and access to opportunity by strengthening the connections between work and learning.

JFF has been involved in school-to-career research and development for over a decade. Through its Benchmark Communities Initiative (BCI), JFF is working with five predominantly urban school districts and their community partners to promote the creation of school-to-career systems that motivate all young people to learn to high standards and plan effectively for their futures.

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